

Appendix A
Field Procedures and Logs

The material in Appendix A was developed in draft form by Hart Crowser for the 1994 Draft RI (Hart Crowser 1994d). For completeness, it is retained here as it was developed. It includes references to all sampling conducted as specified in the RI/FS Management Plan (Hart Crowser 1992a). As a result, it refers to locations sampled outside the Consent Decree Boundary that will be the subject of additional reports.

APPENDIX A: FIELD PROCEDURES

The Remedial Investigation (RI) field program was initiated in February 1992. The initial phase of soil sampling was conducted between February and May 1992. Following Washington State Department of Ecology (Ecology) review of the initial soil quality results from the kettle Areas 7, 16, and 26 as presented in Hart Crowser (1992d), additional soil sampling was conducted in the three kettle areas and selected other areas in late June and July 1992. Supplementary soil sampling was conducted in selected areas of the Site between October 1992 and January 1994. Quarterly groundwater sampling for the RI has been conducted from March 1992 through April 1994 (Table 3.2-1 in Volume 1 summarizes all pre-RI and RI groundwater sampling conducted to date).

Soil Quality Explorations

The RI soil sampling program included completion of the following explorations:

- 328 test pits;
- 15 observational test pits (from which samples were generally not collected);
- 40 trenching locations around foundations;
- 30 soil borings;
- 41 hand-augered borings; and
- 1,676 surface samples.

In addition, 10 samples of railroad ties (wood) were collected. The number of explorations indicated above does not include additional samples collected during the pre-RI and interim source removal.

The results of the RI subsurface exploration program are presented on the exploration logs, which are grouped by Site RI Area, within this appendix. Surface soil sampling forms are not presented in this appendix. The exploration logs represent our interpretation of data compiled from drilling and excavation, sampling, and field testing information at the time of the exploration (exploration dates are listed on each log). Because these logs describe conditions encountered at the time of exploration, soil sample depths and ground surface elevations on all exploration logs are referenced to the grade at the time of exploration, and have not been adjusted for regrading or removal resulting from interim source removal, as was done in the body of this report. Although interim source removal has removed most of the Area 5 explorations completed during the RI, the exploration logs are included in this appendix. Those samples removed during subsequent interim source removal (and thus not representative of current Site conditions) are denoted with (R) next to the sample number on the exploration logs. Field procedures for each of the exploration types are discussed in more detail below.

Test Pit Excavations

Test pits were excavated using a four-wheel-drive Case 580K backhoe, which was capable of operating to depths of approximately 10 to 12 feet. To minimize the sloughing of the test pit

side walls, the backhoe was generally used to dig as deep as required to collect the shallowest proposed sample. Once the sample had been collected, the pit was deepened to the bottom of the next proposed sampling depth. The soil samples were composited from the determined sample depth interval (e.g., 3 to 6 feet), and generally from the two long walls of the excavation (i.e., parallel to the direction of the scoop), except in cases where a discrete portion of the excavation was sampled based on field observations (e.g., stained soils).

If signs of subsurface alteration (e.g., unnatural staining, deteriorated gravels) were still evident at a depth of 10 feet, every effort was made to excavate and sample deeper. However, sloughing gravelly soils generally prevented excavation beyond a depth of approximately 10 feet. The sample intervals specified in the area-specific soil sampling and analysis plans (RI/FS Management Plan; Hart Crowser, 1992a) were followed to the extent possible; however, sample collection intervals were based on field conditions and best professional judgement.

Soil samples from the test pits were collected either by removing depth-specific sample material from the center of the backhoe bucket with a stainless steel spoon, or by using a stainless steel spoon with 10-foot-long extending handle to sample the test pit walls. Soil samples were mixed in a stainless steel bowl, at which time gravels larger than approximately 1/2 inch in diameter were removed since they would not be analyzed by standard laboratory methods. The samples were placed in laboratory-supplied clean glass jar(s) with teflon-lined screw caps, and immediately placed in a cooled ice chest. Soil samples collected for field headspace vapor measurements and volatile organic analyses were placed directly into appropriate sampling jars without mixing. Prior to placement in the ice chest, all sampling jars collected for nitroaromatic explosive (NAX) analysis were wrapped in aluminum foil to limit photolysis (light-induced breakdown) of the nitroaromatic compounds. Samples selected based on the RI/FS Sampling and Analysis Plan (Section 4 in Hart Crowser, 1992a) and field observations were delivered to the analytical laboratory (ATI-Renton or Hart Crowser Chemistry Laboratory) for chemical analyses. Remaining samples were stored under refrigeration at the Site.

The backhoe bucket was steam cleaned after each test pit excavation. All steam cleaning water was collected in a galvanized trough and pumped into 55-gallon drums. Sampling equipment was decontaminated between collection of each soil sample as discussed in the ***Equipment Decontamination*** section.

Soils and other materials encountered in the test pits were documented on a field test pit log form (Figure 5-4 in Hart Crowser, 1992a). Test pits were photographed to show the excavation in relation to its immediate surroundings. Once sampling was completed and the test pit logged and photographed, the test pit excavations were backfilled with the excavated soil and compacted using the backhoe. The test pit locations were staked for subsequent survey.

Observational test pits were also completed in some locations for the purpose of observing subsurface conditions. Dimensions of these excavations varied depending on the conditions to be observed. Soil samples were collected from some observational test pits based on

conditions encountered. All excavation and sampling protocols were generally consistent with those described above for typical test pits.

In addition, trenches approximately 4 feet deep were excavated around the perimeters of selected foundations in Area 18 to observe the presence of potential buried pipes or other drainage systems. Discrete soil samples were collected from depths of 0 to 1 foot and 3 to 4 feet at locations based on field observation. All excavation and sampling protocols were generally consistent with those described above for typical test pits.

Soil Borings

A hollow-stem auger was used to drill soil borings completed for soil quality sampling during the RI. The borings were advanced using either a Mobile B-61 or a Jefco SD-300 drill rig, using 4-inch inside diameter hollow-stem auger. The Jefco rig was used for completion of the deep Phase II RI borings in the kettles, since it has the capability of switching from hollow-stem auger to air rotary operation if refusal was encountered with auger operation at depth. However, all soil borings for soil sample collection (chemical analyses) were completed using hollow-stem auger operation, even to a depth of 100 feet in 26-B-503 completed in the bottom of the Area 26 kettle.

Standard hollow-stem auger drilling techniques were used in advancing the soil borings. No grease other than vegetable oil was used on the auger section joints or accessory tooling. No water was added to the boreholes. Soil borings were photographed to show the exploration in relation to its immediate surroundings and staked for surveying.

Soil Sampling in the Borings. During hollow-stem auger drilling, soil samples were typically collected at 2.5-foot-depth intervals or continuously, beginning at a depth of 2.5 feet below ground surface. Surficial samples were collected manually from the upper 6 inches of material at each boring location following the removal of vegetation or forest duff, if present. Continuous sampling was often required to collect adequate soil sample volume as a result of poor sample recovery caused by the gravelly soils.

Soil samples obtained during hollow-stem auger drilling were collected using the Standard Penetration Test (SPT) procedure described in ASTM D 1587 modified to include a 3-inch-diameter split-spoon and a 300-pound hammer. The procedure involves driving a standard 3-inch outside diameter split-spoon sampler into the soil a distance of 18 inches beyond the end of the borehole. The sampler is driven by a 300-pound hammer dropping 30 inches onto the end of the drilling rod. The number of blows required to drive the sampler the final 12 inches is the (modified) Penetration Resistance. This resistance provides a measure of the density of granular soils (sands and gravels) and consistency of finer grained cohesive soils (silts and clays). This information, along with soil descriptions and other observations, was recorded on field boring forms (Figure 5-4 in Hart Crowser, 1992a).

Samples to be retained for chemical analysis were placed in laboratory-supplied clean glass jar(s) with teflon-lined screw caps, and immediately placed in a cooled ice chest. Where poor recovery occurred, soil was placed in a clean stainless steel bowl covered with aluminum foil

and composited with the next sample interval (typically immediately below). Gravels larger than approximately 1/2 inch in diameter were removed from the samples since they would not be analyzed by standard laboratory methods. Soil samples collected for field headspace vapor measurements and volatile organic analyses were placed directly into appropriate sampling jars without mixing. Prior to placement in the ice chest, all sampling jars collected for nitroaromatic explosive (NAX) analysis were wrapped in aluminum foil to limit photolysis (light-induced breakdown) of the nitroaromatic compounds. Selected samples based on field observations and soil recovery were delivered to ATI-Renton for chemical analysis. Remaining samples were stored under refrigeration at the Site.

The auger flights and all downhole sampling equipment was steam cleaned after completion of each boring. The split-spoon sampler and all other sampling equipment (e.g., stainless steel spoons or bowls) were decontaminated after each sample using the procedures discussed in the *Equipment Decontamination* section.

Hand-Augered Borings

Hand-augered borings were completed throughout the Site where backhoe and drill rig access was limited. Depending on soil conditions, a combination of stainless steel hand-auger, shovel, or post hole digger were used to excavate soils to a depth of three feet.

All samples were collected as the boring was advanced, either from the hand-auger or from the side walls of the (shovel) excavations. Samples were composited in a stainless steel bowl and placed in laboratory-supplied clean glass jar(s) with teflon-lined screw caps, and immediately placed in a cooled ice chest. Gravels larger than approximately 1/2 inch in diameter were removed from the samples since they would not be analyzed by standard laboratory methods. Prior to placement in the ice chest, all sampling jars collected for NAX analysis were wrapped in aluminum foil to limit photolysis (light-induced breakdown) of the nitroaromatic compounds. Soil samples collected for field headspace vapor measurements and volatile organic analyses were placed directly into appropriate sampling jars without mixing.

The hand-augered boring data were recorded on field test pit logs (Figure 5-3 in Hart Crowser, 1992a). Selected samples based on field observations and soil recovery were delivered to the analytical laboratory for chemical analysis. Remaining samples were stored under refrigeration at the Site. All equipment was thoroughly decontaminated between sample locations as discussed in the *Equipment Decontamination* section. Hand-augered borings were photographed to show the exploration in relation to its immediate surroundings, and staked for surveying.

Surface Soil Samples

Surface samples were collected from the upper six inches of soil following the removal of vegetation or forest duff, if present. Each sample was collected using a decontaminated shovel and/or stainless steel spoon. The soil was placed in a decontaminated stainless steel bowl. Gravels larger than approximately 1/2 inch in diameter were removed from the

samples since they would not be analyzed by standard laboratory methods. The samples were placed in laboratory-supplied clean glass jar(s) with teflon-lined screw caps, and immediately placed in a cooled ice chest. Prior to placement in the ice chest, all sampling jars collected for explosive analysis were wrapped in aluminum foil to limit photolysis (light-induced breakdown) of the explosive compounds. No surface samples were analyzed for volatile organics or field screened using the HNU photoionization detector (PID).

All surface sample soil descriptions and observations were recorded on Surface Sample Collection forms (Figure 5-5 in Hart Crowser, 1992a). After completion of sampling, each location was staked or flagged for subsequent survey. Surface samples collected on a grid across the Site Reference Area were generally surveyed prior to sample collection. All equipment was thoroughly decontaminated between sample locations as discussed in the ***Equipment Decontamination*** section.

Headspace Vapor Measurements

In areas where volatile organic analyses of soils were performed, a portion of the soil was collected for soil vapor headspace measurements to screen for the presence of volatile organic compounds (VOCs).

For soil samples to be screened for VOCs, a portion of the sample was retained in a clean glass jar, leaving an air "headspace" above the soil. The mouth of the sampling jar was covered with aluminum foil prior to capping with the plastic cover. The aluminum foil helped limit escape of volatile compounds as the measurement was taken. The soil samples were screened using an HNU PID, Model PID 101, with a 10.2 eV lamp. The headspace measurements were recorded on appropriate field logs.

Railroad Tie Sampling

Wood samples were collected from remaining railroad ties along various stretches of historical railways throughout the Site. The wood samples were collected using an electric drill and 5/8-inch ship-type auger drill bit. Samples consisted of wood cuttings generated during drilling through the thickness of the tie. The wood cuttings were mixed in a stainless steel bowl prior to placement in a laboratory-supplied glass jar with teflon-lined cap.

Hydrogeologic Explorations

The RI hydrogeologic field exploration program included installation of the following:

- Seven monitoring wells (MW-20 through MW-26) in the Water Table Aquifer;
- One monitoring well (MW-27) in a zone of perched groundwater above the Water Table Aquifer;
- Three monitoring wells completed to intercept perched water, if present, beneath the three major geologic kettles (7-B-503 in Area 7, 16-B-501 in Area 16, and 26-B-503 in Area

26);

- Four wellpoints at spring locations (SPR-2 through SPR-5) for groundwater sampling or water level measurements; and
- Six staff gages for measuring surface water elevation (SG-1 through SG-5 in Sequelitchew Creek, and SG-6 in Old Fort Lake).

Monitoring Well Drilling

Two methods of drilling, hollow-stem auger and air rotary, were used for drilling and installation of monitoring wells during the RI. Procedural details of drilling and soil sampling are discussed below.

Hollow-Stem Auger Drilling Methods. Hollow-stem auger was used to drill and complete monitoring wells MW-24, MW-25, and MW-26, as well as the three monitoring wells completed to monitor perched water in each of the three kettle areas (7-B-503, 16-B-501, and 26-B-503). Standard hollow-stem auger drilling techniques were used to advance the soil borings. No grease other than vegetable oil was used on the auger section joints or accessory tooling. No water was added to the boreholes.

In general, soil samples were collected at 5-foot-depth intervals to the depth of exploration indicated on the exploration logs (Figures A-MW-1 through A-MW-8). Samples were collected more frequently when changes in soil type were noted or when sample recovery was poor. The soil samples were collected using the Standard Penetration Test (SPT) procedure described in ASTM D 1587, modified to include a 3-inch-diameter split-spoon and a 300-pound hammer. The sampling procedures were similar to those discussed above for soil quality sampling from borings, except that samples from the monitoring well borings were retained in plastic jars since they were not submitted for chemical analysis. Samples collected from the monitoring well borings were retained only for physical testing (e.g., grain size or laboratory permeability testing), and to allow more detailed observation of geologic material types (e.g., between borings).

Air Rotary Drilling Methods. The air rotary method was used to drill and install five monitoring wells (MW-20 through MW-23 and MW-27). Borings were advanced with a TH-60 top-drive air rotary drill rig using an air-driven percussion bit inside 6- and 9-inch-diameter driven casings. Standard air rotary drilling techniques were used. In general, these techniques involve drilling ahead of the temporary driven casing a distance of one to three feet, driving the casing the same distance by means of a rig-mounted air hammer, and returning the drill cuttings to the surface with pressurized air exiting from the drill bit. An in-line oil trap was used on the air compressor discharge line to restrict oils or greases potentially present in the pressurized air from entering the borehole. A sample of particulate matter entrained in the compressed air was collected to evaluate potential contributions of hydrocarbons to the boreholes. This sampling indicated negligible amounts of hydrocarbon were added to the borehole during drilling (refer to Section 3.2.3 in Volume 1).

In drilling the first monitoring well boring, a thin zone of saturation was observed perched on a till unit. Monitoring well MW-27 was completed in this perched water unit, which is present only seasonally. As a result, the drilling method for the remaining borings was altered to include dual casings, such that the perched unit was sealed off prior to drilling through it to the underlying aquifer (in accordance with Chapter 173-160 WAC). In drilling with the dual casings, the borings were advanced to a depth of approximately 50 feet using 9-inch-diameter threaded casing. Once the 9-inch casing was set into the low-permeability till unit, the 6-inch-diameter threaded casing was telescoped down within the outer casing and was advanced through the till to the depth of exploration. As it turned out, the till and perched water were observed only at the MW-27 location (well MW-22 was advanced with the dual casings through the till to the Water Table Aquifer). Regardless, the dual casing method was used in the other air rotary boreholes as a precaution.

In monitoring wells MW-20 and MW-21, collapsing borehole (heaving) conditions were encountered in fine sand and it was necessary to add water to the borehole to control heave and advance the borehole. The majority of this added water was removed during normal air rotary drilling operations. Regardless, the volume of water added to each boring was recorded on the field log and subsequently removed during well development.

In general, soil samples were collected from the air rotary borings at 5-foot-depth intervals to depths of 100 feet and 10-foot-depth intervals below a depth of 100 feet. Samples were collected more frequently when changes in soil type or conditions were noted in cuttings. Air rotary samples were collected using the Standard Penetration Test (SPT) procedure described in ASTM D 1587 modified to include a 3-inch-diameter split-spoon and a 300-pound hammer. Air rotary samples were used only for descriptive and or physical testing purposes, and were retained in plastic jars.

In accordance with the RI/FS Management Plan (Hart Crowser, 1992a) drill cuttings from monitoring well borings were retained on visqueen-covered, visqueen-lined bermed piles or shallow pits next to the wellheads.

Samples of Kitsap Aquitard Material. Two undisturbed samples of the Kitsap Aquitard were collected during air rotary drilling of the monitoring wells. The samples were collected using a 3-inch outside diameter split-spoon with brass ring inserts. Three 6-inch brass rings were inserted in the sampler, which was lowered down the borehole and driven with a 300-pound hammer. The undisturbed samples collected from MW-20 and MW-23 were submitted for vertical hydraulic conductivity tests using flexible wall permeameter methods at Hart Crowser's geotechnical laboratory. Following extraction from the split-spoon, the samples were capped and sealed with electrical tape and placed in sealable plastic bags with moist paper towels to avoid desiccation.

The first attempt to collect an undisturbed sample of the aquitard material (from MW-22) using a Shelby tube was unsuccessful because after the Shelby tube was driven into the very stiff silt (too stiff for the tube to be pushed), the pins attaching it to the drill rods snapped during the retrieval attempt. The Shelby tube remained in the bottom of the boring preventing further sampling efforts. No cohesive soils suitable for laboratory hydraulic conductivity (K)

testing were encountered during the drilling of MW-21.

Monitoring Well and Wellpoint Installation

Monitoring Well Installation. Groundwater monitoring wells were installed in general accordance with Chapter 173-160 WAC "Minimum Standards for Construction and Maintenance of Wells". The monitoring well construction diagrams for the newly installed wells are presented on Figures A-MW-1 through A-MW-8 at the end of this appendix. The well installation procedures were essentially the same for all monitoring wells, regardless of the drilling method (hollow-stem auger or air rotary), and are discussed below.

The well installation procedure began by pulling back the auger or temporary steel casing to the desired depth. If the well completion depth was above the bottom of the boring, the lower portion of the borehole was backfilled with bentonite. As well installation proceeds, the auger or casing was incrementally withdrawn.

A threaded end cap was attached to the bottom of the 10-foot or 15-foot length of 2-inch-diameter Schedule 40 PVC 0.020-inch slotted well screen. For each well, the well screen was threaded to the PVC riser pipe and lowered into the casing. No glues or solvents were used to couple the PVC casing. In an attempt to keep the PVC straight in the deep monitoring wells, the PVC was generally suspended from a drill rig line throughout installation.

Silica sand (Colorado 10/20) was used as a filter pack around the well screen, and typically extended to a level three to five feet above the top of the screen. Bentonite chips were placed as an annular seal above the sand pack. The annular seal extended up to a depth of approximately 2 to 5 feet below ground. All new wells were completed with concrete surface seals and locking above-ground protective steel monuments. The PVC well cap was vented and marked with the well number.

Installation of Wellpoints for Springs 2, 3, 4, and 5. Four wellpoints were installed for the purpose of monitoring groundwater quality and/or water levels at spring locations along Sequelitchew Creek.

The wellpoints were installed at Springs 2, 4, and 5 using a 12-pound sledge hammer to drive the point to a depth of approximately 3 to 4 feet below ground. The wellpoint at Spring 3 was driven horizontally 2.5 feet into the creek bank directly above a compressed peat layer (Kitsap Aquitard), over which the spring discharge occurs. The 3-foot-long wellpoint screen sections consisted of 1.25-inch inside diameter, PVC-lined, galvanized steel with crescent-shaped openings covered by 0.010-inch mesh screen. All well points were subsequently surveyed for location coordinates and elevations.

Monitoring Well Development

The newly installed monitoring wells were developed using either a Grundfos Ready Flow II submersible pump and/or a Geoguard gas drive pump. The Geoguard pump was driven by an

air compressor fitted with an in-line oil trap.

Monitoring wells MW-20 through MW-24 and MW-27 were initially developed using the submersible pump. During development of these wells, the pump frequently shut down due to accumulations of fine-grained sediment inside of the pump housing, necessitating that the pump be pulled and cleaned several times per well. After each cleaning, the performance of the pump gradually deteriorated as the pump became clogged with silt.

Following the first round of groundwater sampling in March 1992, additional well development was performed in each of the newly installed monitoring wells using the Geoguard gas drive (air-lift) pump in an effort to redevelop the well and decrease the turbidity of the groundwater samples. Because the air lift system was less impeded by suspended sediment in the water, the second round of well development was more successful than the initial effort using the submersible pump. The two Area 40 wells installed in July 1992 (MW-25 and MW-26) were developed using the air lift pump alone.

All downhole development equipment was decontaminated before use and between wells. The decontamination consisted of scrubbing with Alconox solution, followed by a tap water rinse and a thorough spray with deionized water. In addition, the submersible pump was run submersed in an Alconox solution followed by tap water. Following development, each newly installed well was fitted with a new dedicated PVC bailer and new polyethylene rope kept within a plastic bag in the well monument.

All development water from the new monitoring wells was barreled and subsequently transferred to on-site Baker tanks (under the direction of DuPont Environmental Remediation Services [DERS]) for subsequent disposal.

Field Exploration Documentation

A record of drilling and soil sampling operations was maintained on a field exploration log form. Soil samples recovered during drilling were visually classified in the field in general accordance with the system presented on Figure A-1, Key to Exploration Logs. The soil descriptions included the following properties: density of sands and gravel/consistency of silts and clays, moisture, color, minor constituents, and major constituents. The presence of non-soil substances (e.g., debris or wood) was also noted.

Other pertinent data recorded on the field exploration logs included:

- Soil sample interval, type, and recovery;
- Drilling conditions;
- Depth at which groundwater was encountered in boring;
- Soil vapor headspace (PID) readings, if applicable; and

- Soil pH measurements, if applicable, using pH paper in a soil/deionized water slurry.

The logs for monitoring wells, test pits, soil borings, and hand-augered borings completed during the RI are provided at the end of this appendix. Following the RI monitoring wells, all the soil quality exploration logs are arranged according to area (e.g., Area 6, Area 7, etc.). The figure numbers for these logs include the area number (e.g., Figure A-6-1 for Area 6, etc.).

Equipment Decontamination

Before drilling began, the drill rig, auger sections, steel casing sections, and downhole equipment were steam cleaned. Between each boring, the drilling and downhole soil sampling equipment was steam cleaned using tap water from the on-site fire protection system. All steam cleaning water was collected in a galvanized trough and pumped into 55-gallon drums. At the completion of drilling activities all decontamination water was collected and pumped into on-site Baker Tanks (under the direction of DERS) for subsequent disposal.

Between collection of each soil sample for chemical analysis, all soil sampling equipment was decontaminated using the following procedures:

- Scrub with detergent solution (ALCONOX);
- Rinse with tap water; and
- Thoroughly spray with deionized water.

Borehole Abandonment

Boreholes, which were not completed as monitoring wells, were abandoned by pouring bentonite chips down the auger as the auger was withdrawn, in accordance with Chapter 173-160 WAC. The borings were capped with concrete surface plugs and staked for subsequent surveying.

Exploration Survey (Horizontal and Vertical Control)

Horizontal and vertical surveying control was provided for the newly installed monitoring wells. The surveying was completed by ESM, Inc. of Renton, Washington. The top of the PVC well casings were surveyed to a vertical accuracy of 0.01 foot, relative to National Geodetic Vertical Datum (NGVD). The surveyed measuring point was identified on the well casings for reference during depth to water measurements. Horizontal positions of the well casings were electronically surveyed to an accuracy of 0.1 foot, relative to state plane coordinates.

The horizontal and vertical positions of all soil quality explorations, wellpoints, springs, sea level seeps, surface water sampling locations, and staff gages were surveyed by Hart Crowser

using a Pentax PTS-II Series Electronic Total Station Laser Transit. The transit was calibrated at each location using panel marks and survey points established by ESM, Inc., or surveyed monitoring well top of casings.

Soil sampling locations except for selected locations within the Site Reference Area and the area background samples were surveyed by Hart Crowser using the Total Station Laser Transit. At each location, the State Plane coordinates (northing and easting) were recorded. Ground surface elevations were also generally recorded. The grid coordinates for the initial Site Reference Area samples were located on detailed 1 inch = 100 feet base maps (developed from the aerial flyover), and then field located according to these maps using conventional tape and compass techniques and landmarks as guides. Sample locations for Site Reference Area sampling conducted in November 1993 through January 1994 were surveyed prior to sampling based on predetermined grid coordinates. The (off-site) area background samples were measured from landmarks (e.g., dirt roads) using tape and compass techniques.

Groundwater and Surface Water Sampling

The first four rounds of RI groundwater and surface water sampling were conducted at all locations which could be sampled in March, June, September, and December of 1992. A fifth round of sampling was conducted at selected locations in January 1993. Quarterly groundwater sampling at selected locations has subsequently been conducted in April, July, and October 1993, and January and April 1994. Additional discussions of groundwater sampling and surface water sampling conducted to date are provided in Sections 3.2.1 and 4.2.1 of Volume 1, respectively. The following sections discuss the equipment and procedures used for groundwater and surface water sampling.

Groundwater Sampling Equipment

The following equipment was used for groundwater and surface water sampling:

- pH, temperature, and electrical conductivity meters;
- Oxygen meter;
- Electronic well sounder;
- Dedicated polyethylene rope;
- Dedicated PVC bailer;
- Stainless steel funnel;
- Stainless steel bucket;
- 0.45 micron filter and peristaltic pump with silicone and polyethylene tubing;
- Laboratory-supplied sampling containers with appropriate preservatives already added;
- Blue Ice and cooler; and
- Sample Custody Record.

Monitoring Well and Wellpoint Sampling Procedures

Groundwater samples were collected from monitoring wells and wellpoints (at springs) using

the following procedures:

- The water levels in each well were measured and the volume of water within the well casing calculated.
- The sampling site was prepared by laying out visqueen around the base of each monitoring well. The Groundwater Sampling Data Form (Figure 5-7 in Hart Crowser, 1992a) was filled out;
- Three casing volumes of water were purged from the well using a dedicated PVC bailer and rope. A 1-inch-diameter stainless steel bailer was used for the wellpoints (not dedicated). All purge water was barreled. During purging, field parameters (pH, temperature, and specific conductance) were measured following removal of one, two, and three casing volumes. If the pH and conductance measurements were approximately stable between the second and third casing volumes, the dissolved oxygen and temperature were measured and the groundwater sample was collected. If the parameters were not considered stable, purging continued with parameter measurements after each additional half casing volume. All readings were recorded on the Groundwater Sampling Form. Because Spring-3 flowed continually (from the horizontal wellpoint), it was sampled without purging;
- Once purging was completed, the groundwater sample was collected using the dedicated PVC bailer in the monitoring wells, or 1-inch-diameter stainless steel bailer in the wellpoints, and poured through a decontaminated stainless steel funnel into clean, labeled bottles provided by the laboratory;
- For samples collected for priority pollutants, bottles for volatile organics (VOC) analysis were filled first. The VOC sample bottles were slowly filled with water, capped, inverted, and tapped to check for remaining air bubbles. Samples for dissolved metals analysis were filtered directly from the bailer using a peristaltic pump with in-line 0.45 micron filter;
- Once filled, each bottle was capped and placed into coolers with Blue Ice. VOC bottles were placed in plastic sealable bags to minimize possible cross contamination and/or breaking of the bottles. These bottles were also kept away from direct contact with the Blue Ice to prevent freezing of the sample water;
- At the end of each sampling day, the samples were hand delivered to ATI-Renton using standard chain of custody procedures.

Background Groundwater Quality Sampling Procedures

Groundwater samples were also collected twice (July and December 1992) from six off-site wells to evaluate area background groundwater quality. These six wells included four production wells and two monitoring wells. Locations of the background wells are discussed in Section 3.2 of Volume 1.

Samples from the production wells were collected from sampling spigots positioned in-line prior to any treatment systems. Prior to sample collection the pump was run for sufficient time to purge three casing volumes. Samples from these spigots were poured directly into the sample bottles through decontaminated stainless steel funnels. Samples for dissolved metals were filtered from water collected in a decontaminated stainless steel bucket using the same procedures as for on-site monitoring wells. Samples from the monitoring wells were collected from dedicated Hydrostar sampling pumps in the wells. These pumps were driven by an air compressor. The sampling procedures were the same as for the production wells.

Surface Water and Sea Level Seep Sampling Procedures

Surface water samples were collected using a decontaminated stainless steel bucket dipped into the lake or creek. For sampling of Sequalitchew Creek, the samples were collected beginning at the furthest downstream location (SW-1) and moving upstream. For the Sea Level seeps on the beach, the bucket was positioned to intercept the seepage. Because the seeps are submerged at high tides, the Sea Level seeps were sampled at low tide.

Field parameters and dissolved oxygen content were recorded prior to sample collection. Sample bottles were filled through a stainless steel funnel into the sample bottles. Samples for dissolved metals analysis were filtered directly from the bucket using a peristaltic pump with in-line 0.45 micron filter.

As with all water samples collected during the RI, each bottle was capped and placed into coolers with Blue Ice. At the end of each sampling day, the samples were hand-delivered to ATI-Renton using standard chain of custody procedures.

Freshwater Sediment Sampling Procedures

Freshwater sediment samples were collected from each of the 7 surface water sampling locations concurrent with the first round of RI surface water sampling in March 1992. At each sampling location, the surface water sample was collected prior to collection of the sediment sample to avoid creating excessive turbidity (non-representative) in the water sample.

Freshwater sediment samples collected in March 1992 were grab samples collected from the upper 6 inches of sediment substrate using a decontaminated shovel. The sediment sample was mixed in a stainless steel bowl using a stainless steel spoon prior to placing the sample in sample jars. Gravels larger than approximately 1/2 inch in diameter were removed since they would not be analyzed by standard laboratory methods. At two locations in the creek and one location in the lake, an additional portion of sample was retained for grain size analysis (Appendix E).

In July 1993, six Old Fort Lake sediment samples were collected from randomly selected locations within a 100-foot grid system. All samples were located at least 50 feet from the low water line at the time of sampling. Two surface and subsurface composite samples were

collected from each of the six locations at depths of 0 to 2 cm and 2 to 15 cm. A diver collected the samples using a push-core sampler.

The sampling equipment was thoroughly decontaminated between each sampling location by scrubbing with an Alconox solution, followed by successive rinses with tap water and deionized water.

Marine sediment sample collection methods are discussed in Appendix D.

Sample Custody Documentation

This section discusses handling, labeling, and custody of soil, water, and sediment samples.

Sample Handling. Field samples were collected according to the procedures specified in the sections above. Preservation and storage measures for all samples were followed in general accordance with the Quality Assurance Project Plan (Section 5) in the RI/FS Management Plan (Hart Crowser, 1992a).

Sample Labeling. Sample numbers, date and time, sampler's initials, Hart Crowser job number, and other pertinent comments such as preservation were recorded on each sample label. To expedite sample collection, labels were generally filled out prior to sampling with only the time and date needing completion at the time of sampling.

Sample Custody. Custody records were maintained for all soil, water, and sediment samples collected during the RI. Samples were delivered by the Hart Crowser field representative to the laboratory, generally at the end of each sampling day, therefore the chain of custody form was signed only by the Hart Crowser representative and the laboratory representative.

Specifications for chemical analyses were made on the custody record under the Testing header. Other information listed on this form included date of sampling, sample designations, sampler's signature, Hart Crowser project name and job number, sample matrix, laboratory-assigned number, total number of sample containers, method of shipment, and any additional specialized instructions for sample holding, extraction, or analysis with reference to specific laboratory work orders. Copies of all chain of custody records are retained by Hart Crowser.

Hydrogeologic Data Collection

Water level monitoring, *in situ* hydraulic conductivity testing (slug testing), and short-term pumping tests were conducted to provide data on groundwater flow directions and rates. The equipment and field procedures used are discussed below.

Water Level Monitoring

Depth to water measurements in all groundwater and surface water locations were made every two months between April 1992 and December 1992. Water level measurements were

collected using an electric well probe and tape measure graduated in 0.01-foot increments. Depth to water below the top of surveyed measuring point on the top of the PVC well casing was recorded to 0.01 foot. The tip of the well probe was rinsed between each measurement. The water level data are presented in Table A-1.

In Situ Hydraulic Conductivity Testing (Slug Testing)

In situ hydraulic conductivity tests (slug tests) were conducted in 12 monitoring wells during the RI. Slug tests are the typical method for estimating hydraulic conductivity (K) of subsurface soils near a well, by measuring the rate of water level fall or rise in the well after the static water level is suddenly displaced.

In falling head slug tests, a 10-foot-long, 1.5-inch-diameter, solid PVC rod was "instantaneously" lowered into the well, causing a sudden rise in the water level. An automatic data acquisition system with downhole 7 psi pressure transducer recorded the falling water level over time as it re-equilibrated toward the static level. In the rising head tests, the situation was reversed; the slug rod was "instantaneously" withdrawn from the well, causing the water level to drop, followed by a water level rise to equilibrium. The slug rod and pressure transducer were decontaminated between the testing of different monitoring wells.

Because all monitoring wells tested are in aquifers under unconfined conditions, data from all tests were analyzed by the method of Bouwer and Rice (1976) for unconfined (water table) aquifer conditions. The water level response in newly installed monitoring wells MW-20 and MW-21 was too fast to provide any usable data for analysis. The results of the slug tests are provided in Section 3.1.

Short-Term Pumping Tests

In addition to the slug tests, short-term pumping tests were conducted in two selected monitoring wells. The primary reason these pumping tests were conducted instead of additional slug tests was that, by pumping continuously, a larger portion of the aquifer could potentially be stressed, resulting in more representative data.

In conducting the tests, a 2-inch-diameter submersible pump was placed near the bottom of the well casing. The automatic data logger's pressure transducer was placed as deep as possible above the pump. The pump was run at the maximum rate (4 to 5 gpm depending on lift) for approximately 45 minutes, during which time drawdown data were recorded automatically. The discharge rate was monitored frequently during pumping by measuring the time required to fill a 4-gallon bucket. After approximately 45 minutes, the pump was shut off and the water level recovery data were recorded until static conditions were achieved.

The pump discharge hose and pressure transducer cable occupied most of the space within the monitoring well casing. Therefore, it was not possible to collect manual (well sounder) depth-to-water measurements as backup to the data logger readings. The 7 psi transducer was manufactured by Instrumentation Northwest (INW) of Redmond, Washington. The transducers are routinely sent back to INW for recalibration using a pressure cell apparatus.

The water produced during the pumping tests was collected in the drums also used for storing groundwater sampling purge water. This water was collected and pumped into on-site Baker Tanks (under the direction of DERS) for subsequent disposal.

All downhole development equipment was decontaminated before use and between wells. The decontamination consisted of scrubbing with Alconox solution, followed by a tap water rinse and a thorough spray with deionized water. In addition, the submersible pump was run submersed in an Alconox solution followed by tap water.

Data from all tests were analyzed by the Cooper-Jacob semi-logarithmic method (Cooper and Jacob, 1946). Because the monitoring wells were not designed to be hydraulically efficient, it is likely that a substantial portion of the drawdown observed during pumping may have been attributable to well loss. As a result, the recovery data (when pump was turned off) were generally considered more representative of aquifer response than the pumping data. The results of the pumping tests are provided in Section 3.1.

References for Appendix A

Bouwer, H. and R.C. Rice, 1976. A Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifers with Completely or Partially Penetrating Wells, *Water Resources Research*, V. 12, No. 3, pp. 423-428.

Cooper, H.H. and C.E. Jacob, 1946. A Generalized Graphical Method for Evaluating Formation Constants and Summarizing Well Field History, *Transactions of the American Geophysical Union*, V. 27, pp. 526-534.

**MONITORING WELL
BORING LOGS AND CONSTRUCTION DATA**

Key to Exploration Logs

Sample Description

Classification of soils in this report is based on visual field and laboratory observations which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field nor laboratory testing unless presented herein. Visual-manual classification methods of ASTM D 2488 were used as an identification guide.

Soil descriptions consist of the following:

Density/consistency, moisture, color, minor constituents, MAJOR CONSTITUENT, additional remarks.

Density/Consistency

Soil density/consistency in borings is related primarily to the Standard Penetration Resistance.

Soil density/consistency in test pits is estimated based on visual observation and is presented parenthetically on the test pit logs.

SAND or GRAVEL	Standard Penetration Resistance (N) in Blows/Foot	SILT or CLAY	Standard Penetration Resistance (N) in Blows/Foot	Approximate Shear Strength in TSF
Density		Consistency		
Very loose	0 - 4	Very soft	0 - 2	<0.125
Loose	4 - 10	Soft	2 - 4	0.125 - 0.25
Medium dense	10 - 30	Medium stiff	4 - 8	0.25 - 0.5
Dense	30 - 50	Stiff	8 - 15	0.5 - 1.0
Very dense	>50	Very stiff	15 - 30	1.0 - 2.0
		Hard	>30	>2.0

Moisture

Dry	Little perceptible moisture
Damp	Some perceptible moisture, probably below optimum
Moist	Probably near optimum moisture content
Wet	Much perceptible moisture, probably above optimum

Minor Constituents

Estimated Percentage

Not identified in description	0 - 5
Slightly (clayey, silty, etc.)	5 - 12
Clayey, silty, sandy, gravelly	12 - 30
Very (clayey, silty, etc.)	30 - 50

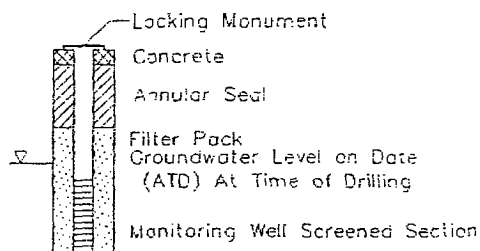
Legends

Sampling Test Symbols

BORING SAMPLES

	Split Spoon
	Shelby Tube
	Cuttings
	Core Run
*	No Sample Recovery
P	Tube Pushed, Not Driven

Groundwater Observations



Test Symbols

GS	Grain Size Classification
CN	Consolidation
TUU	Triaxial Unconsolidated Undrained
TCU	Triaxial Consolidated Undrained
TCD	Triaxial Consolidated Drained
OU	OU
DS	Direct Shear
K	Permeability
PP	Pocket Penetrometer Approximate Compressive Strength in TSF
TV	Torvane Approximate Shear Strength in TSF
CBR	California Bearing Ratio
MD	Moisture Density Relationship
AL	Atterberg Limits
	Water Content in Percent Liquid Limit Natural Plastic Limit
(R)	Sample Removed during Interim Source Removal



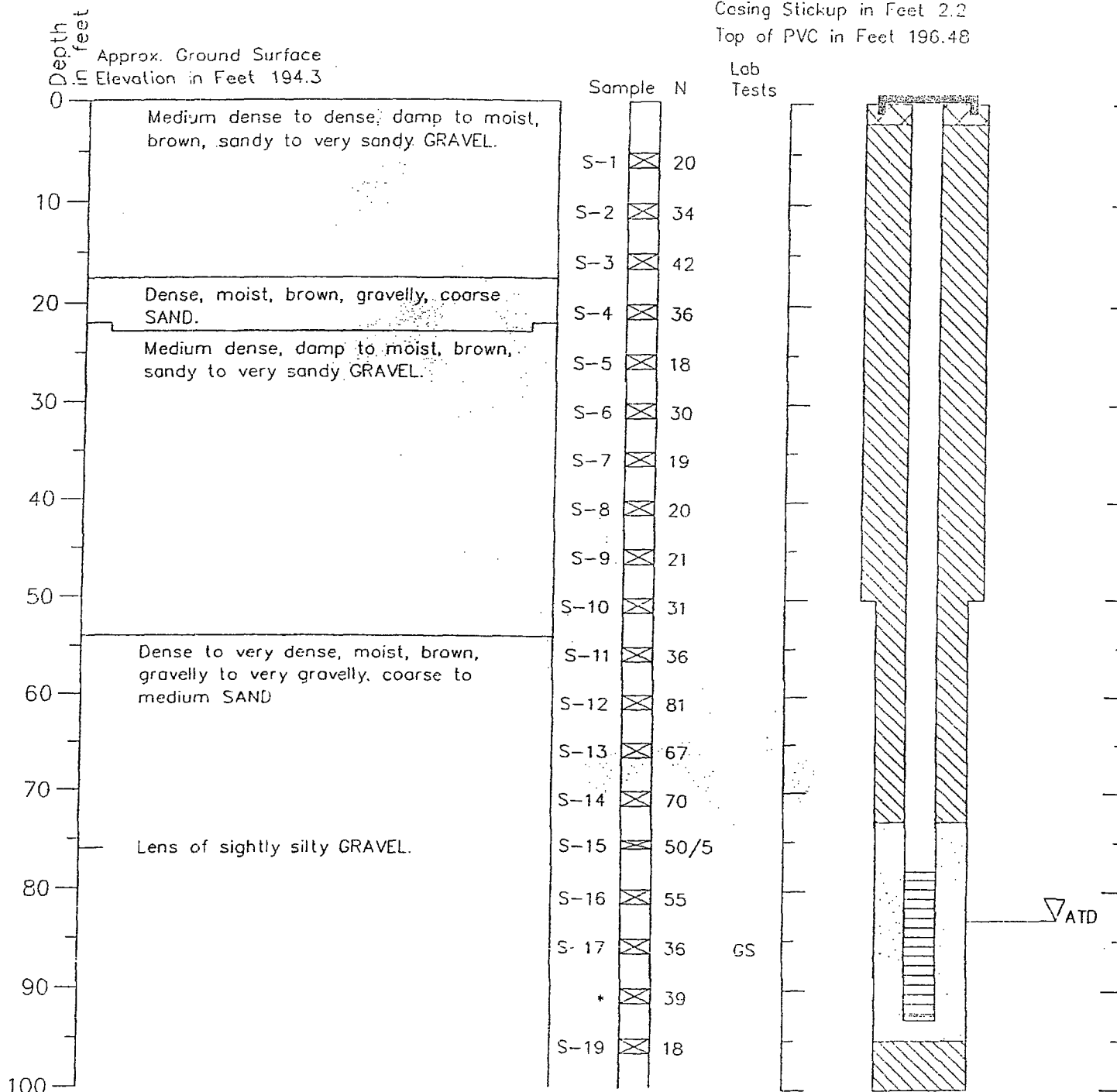
Figure A-1

Drilling Log and Construction Data for Monitoring Well MW-20

Geologic Log

Monitoring Well Design

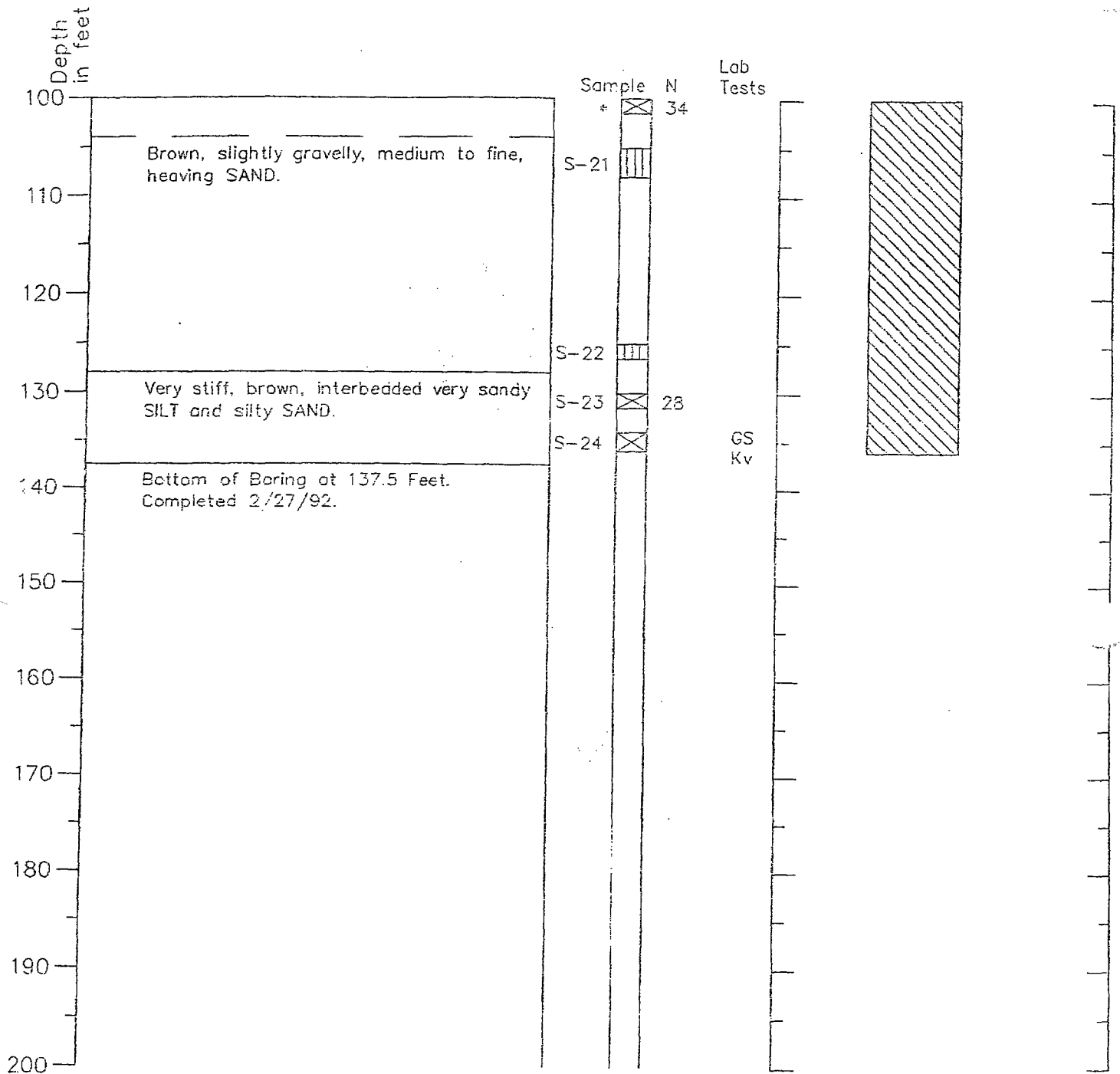
Casing Stickup in Feet 2.2
Top of PVC in Feet 196.48



Boring Log and Construction Data for Monitoring Well MW-20

Geologic Log

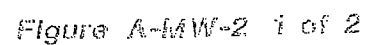
Monitoring
Well Design



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Geologic Log

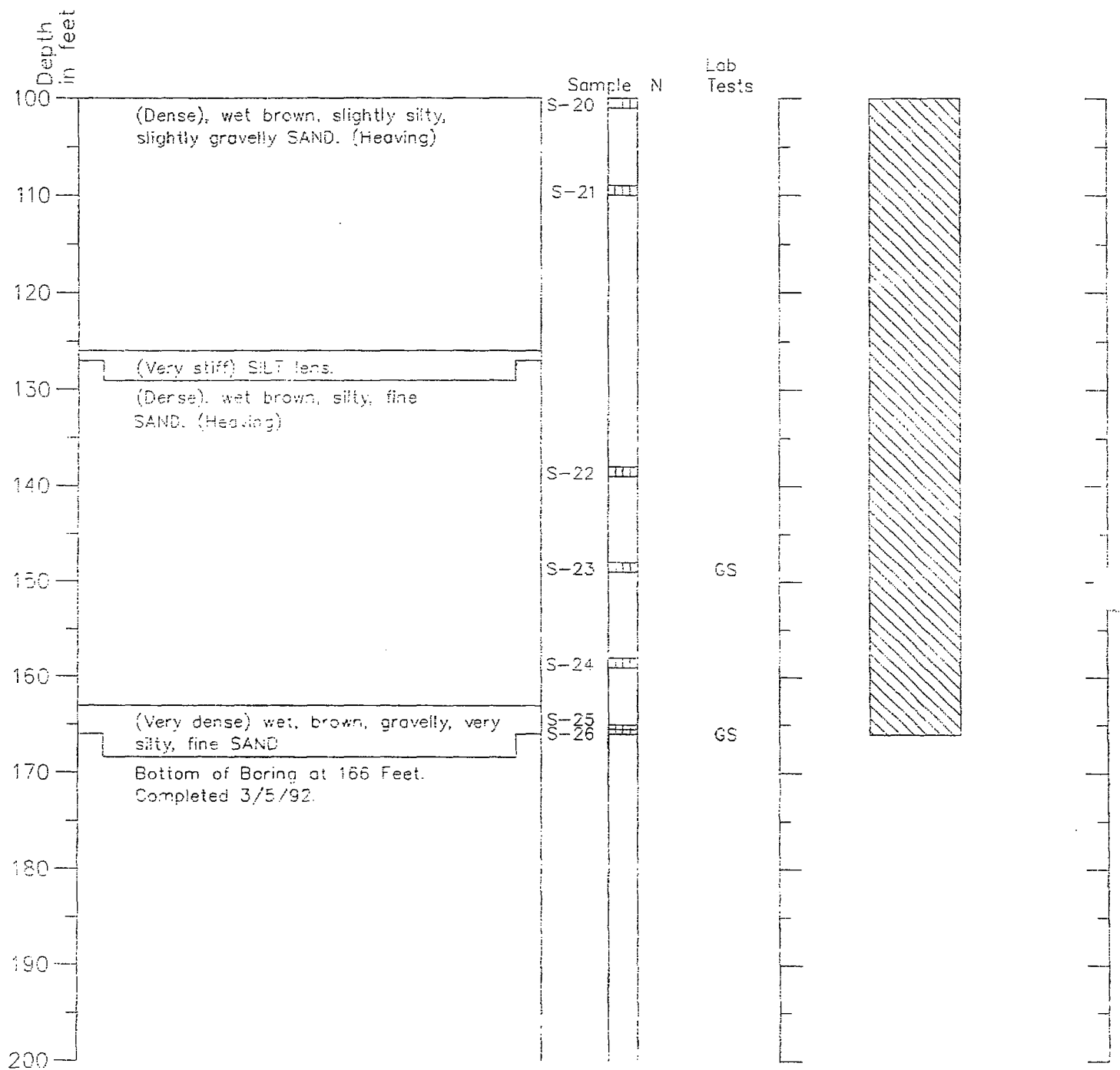
Cosing Stickup in Feet 2.6
Top of PVC in Feet 215.86



Boring Log and Construction Data for Monitoring Well MW-21

Geologic Log

Monitoring
Well Design



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

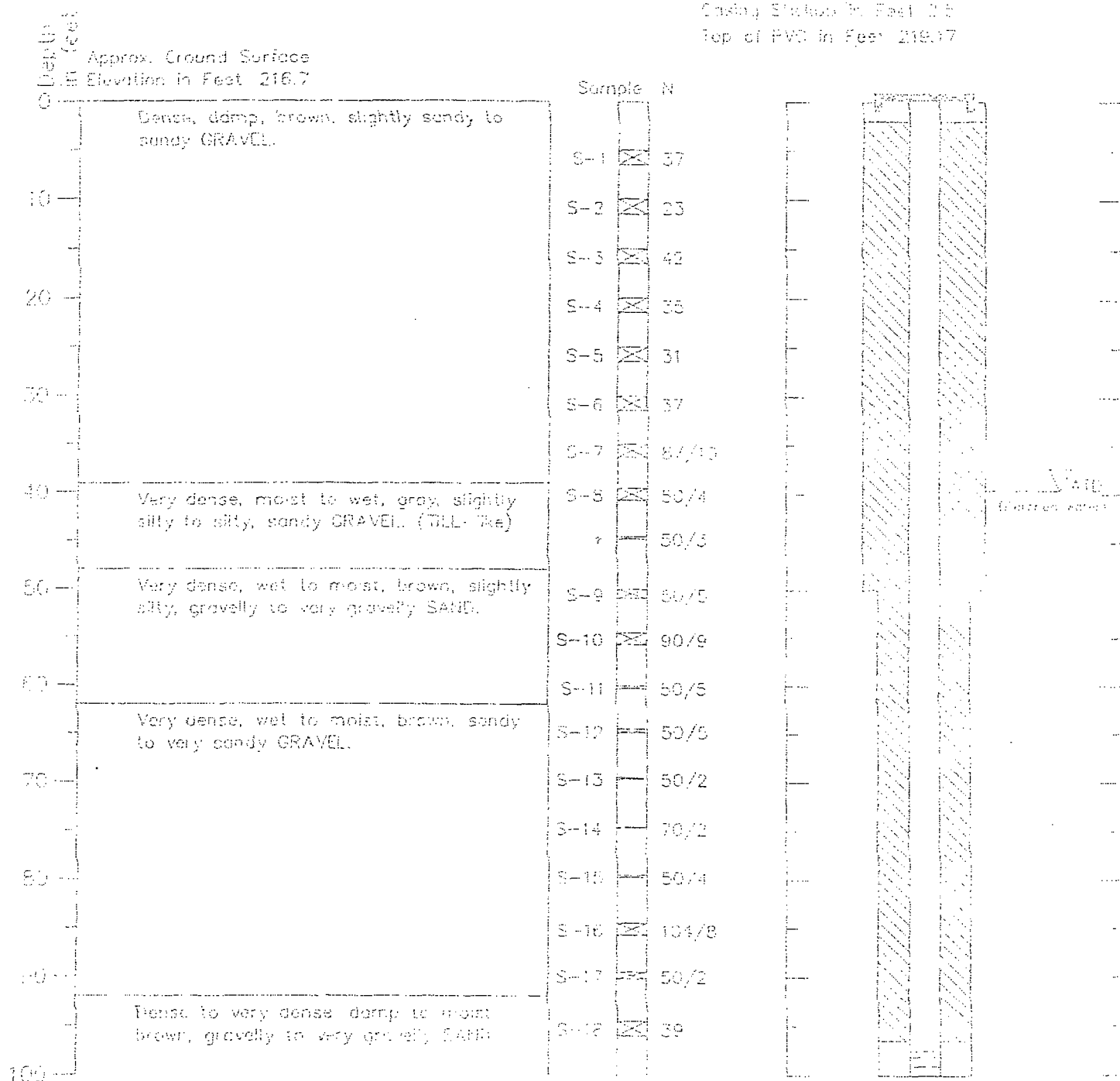
Figure A-MW-2 2 of 2

Monitoring Well MW-22

Geologic Log

Monitoring Well Design

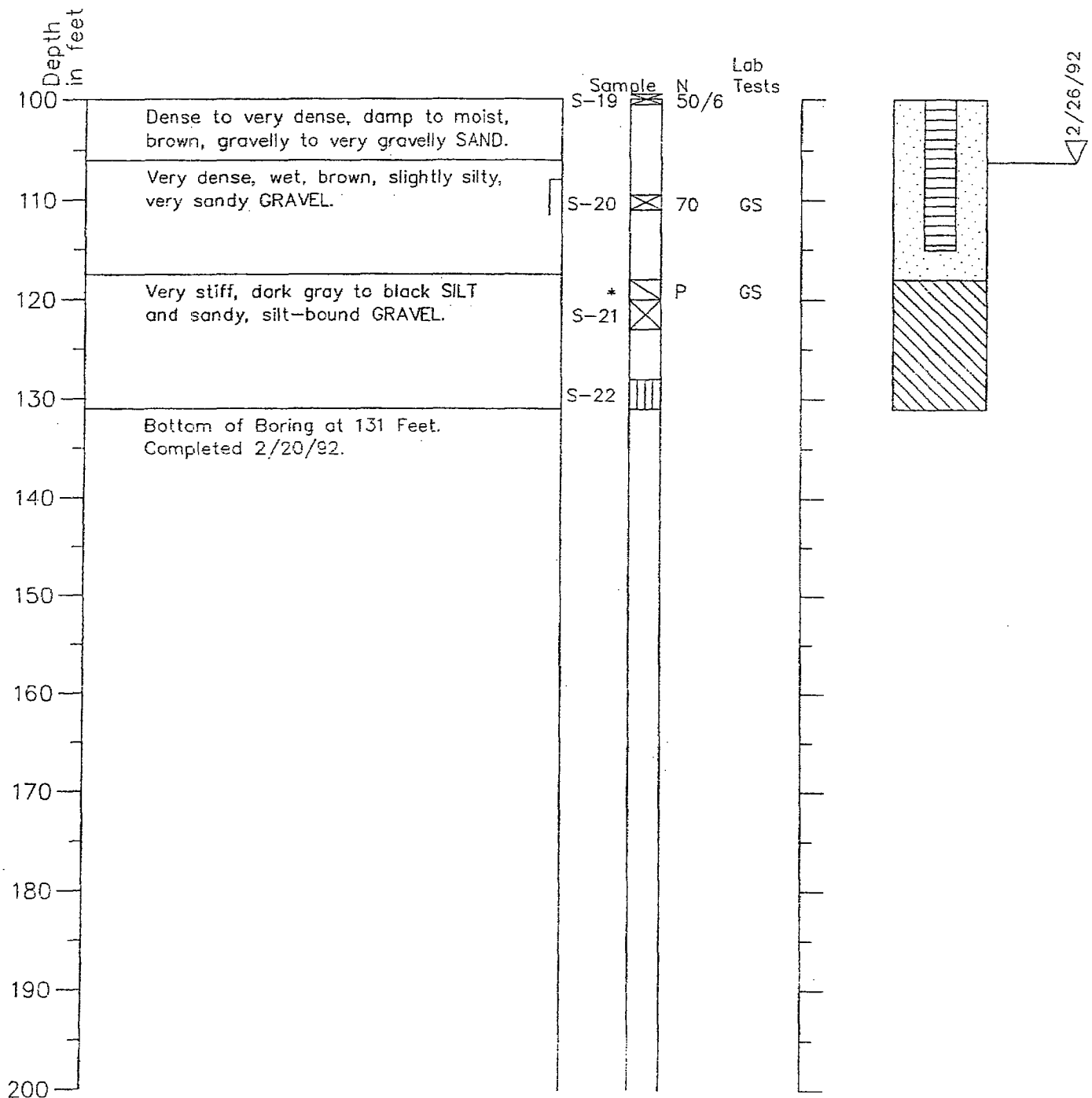
Casing Station in Feet 2.5
Top of PVC in Feet 219.17



Boring Log and Construction Data for Monitoring Well MW-22

Geologic Log

Monitoring
Well Design



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. Sample S-22 was cuttings sample collected after attempted Shelby tube broke off of drill rods.

Figure A-MW-3 2 of

Boring Log and Construction Data for Monitoring Well MW-23

Geologic Log

Monitoring Well Design

Casing Stickup in Feet 2.4
Top of PVC in Feet 209.81

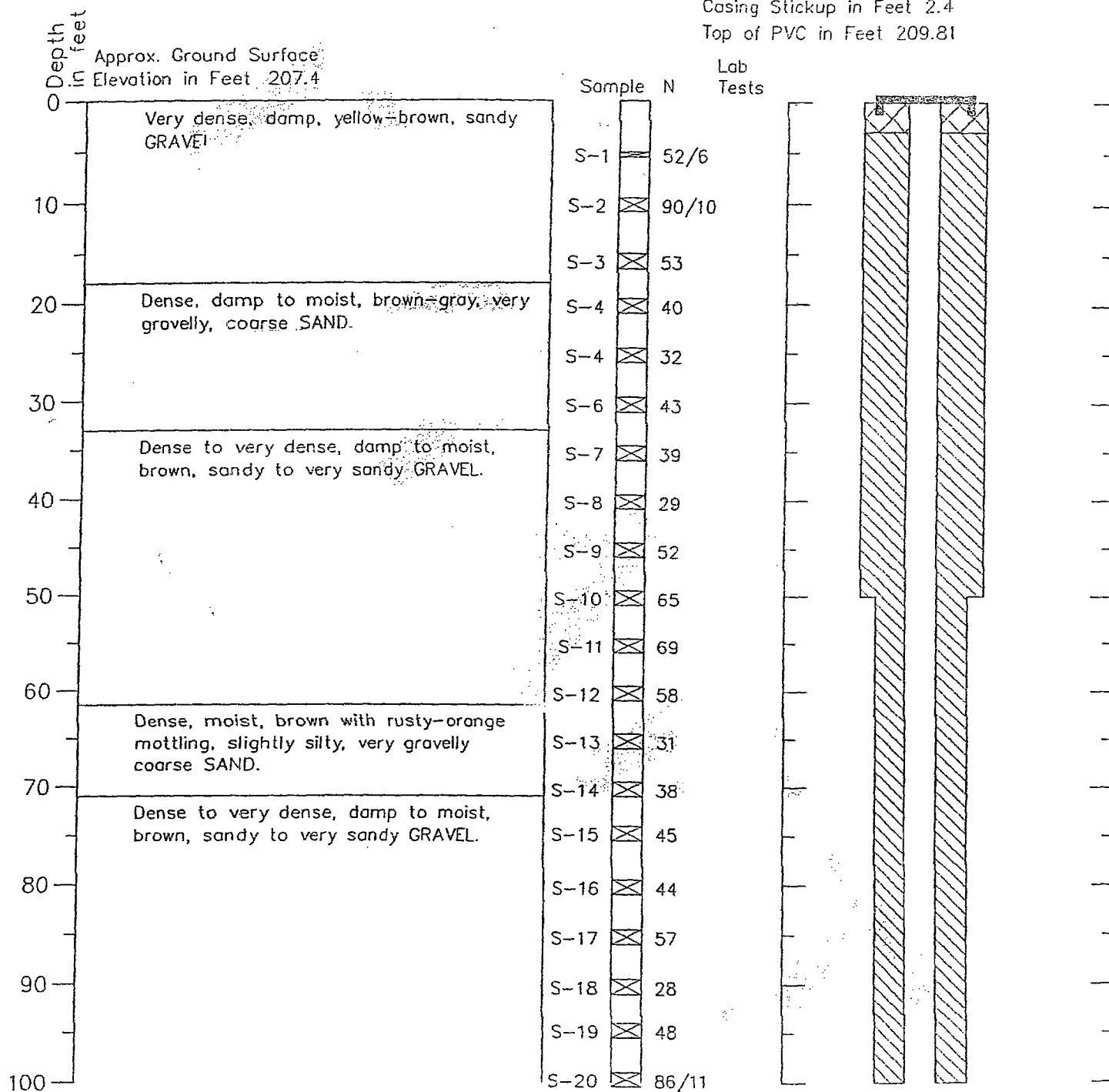
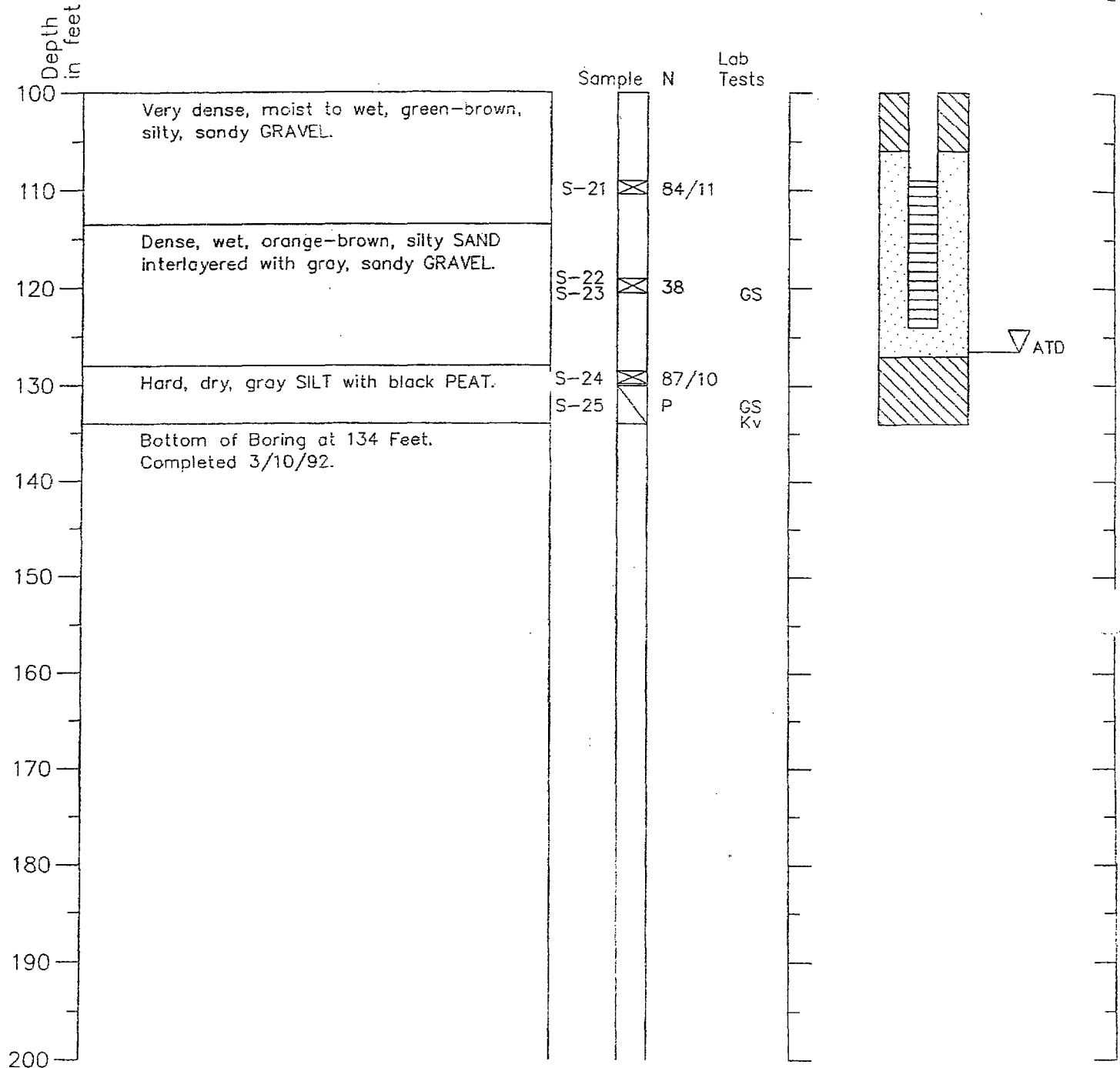


Figure A-MW-4 1 of 2

Boring Log and Construction Data for Monitoring Well MW-23

Geologic Log

Monitoring
Well Design



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

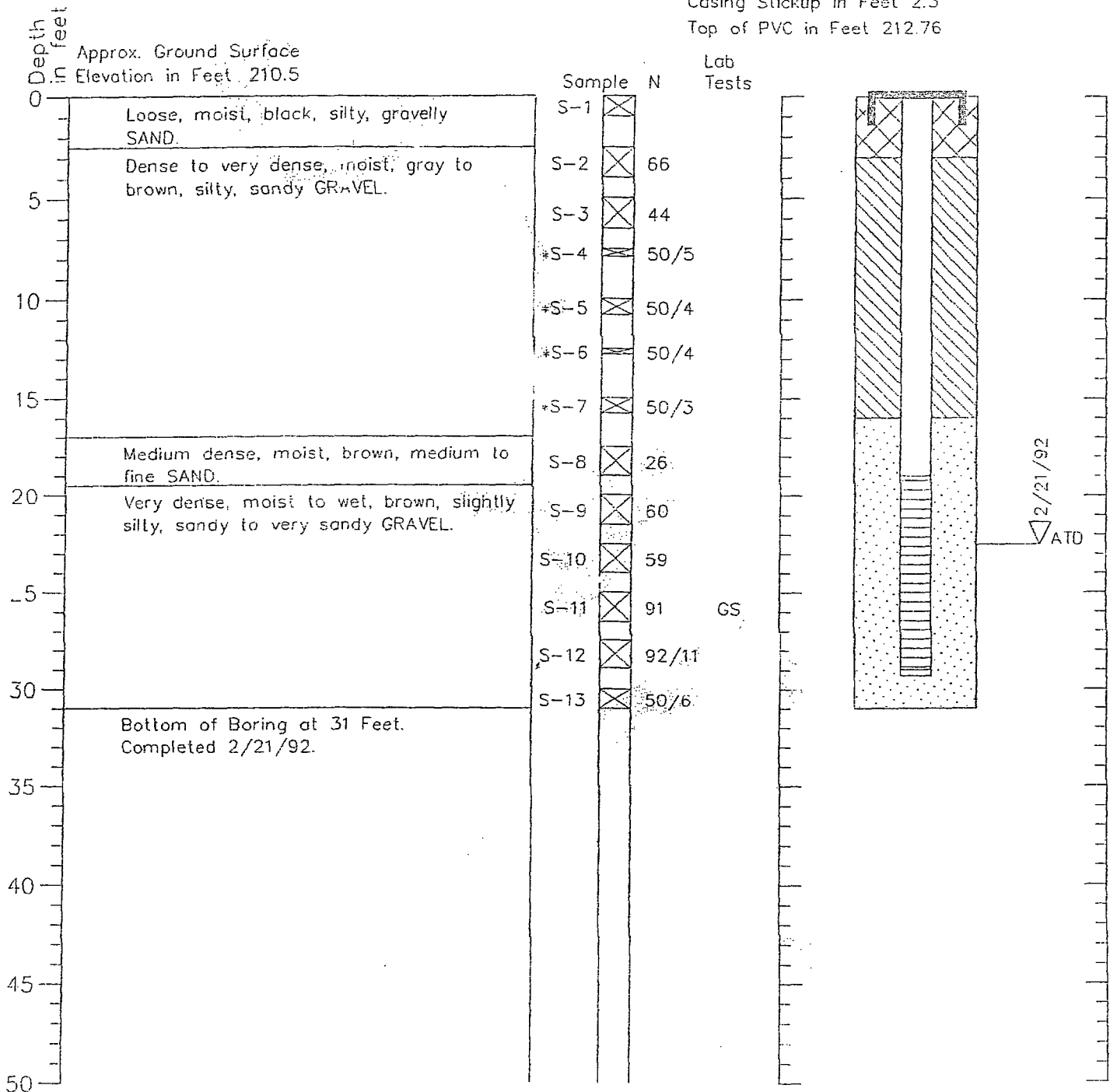
Figure A-MW-4 2 of .

Boring Log and Construction Data for Monitoring Well MW-24

Geologic Log

Monitoring Well Design

Casing Stickup in Feet 2.3
Top of PVC in Feet 212.76



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Figure A-MW-5

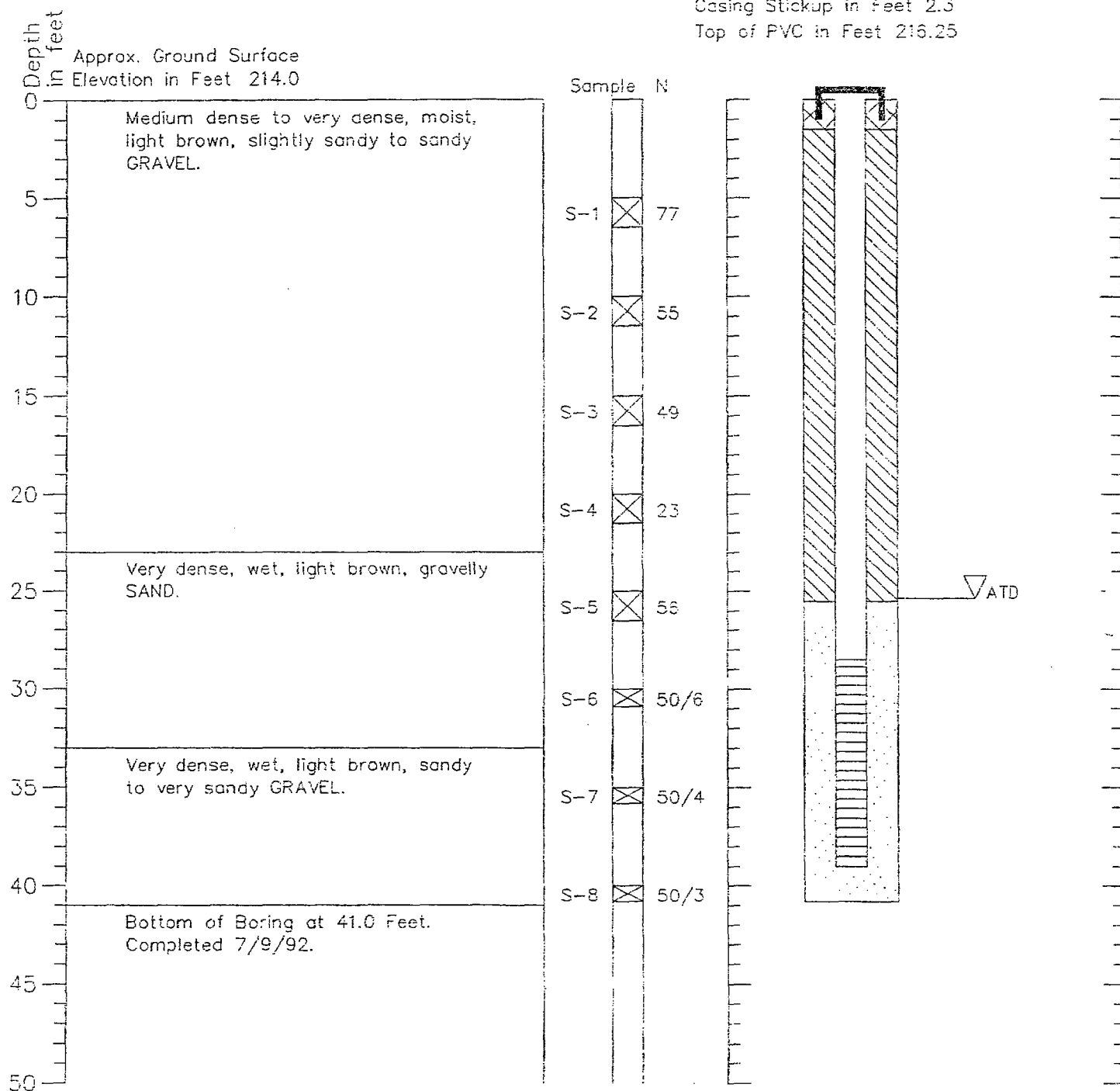
Boring Log and Construction Data for Monitoring Well MW-25

Geologic Log

Monitoring Well Design

Casing Stickup in Feet 2.3

Top of PVC in Feet 216.25



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Figure A-MW-6

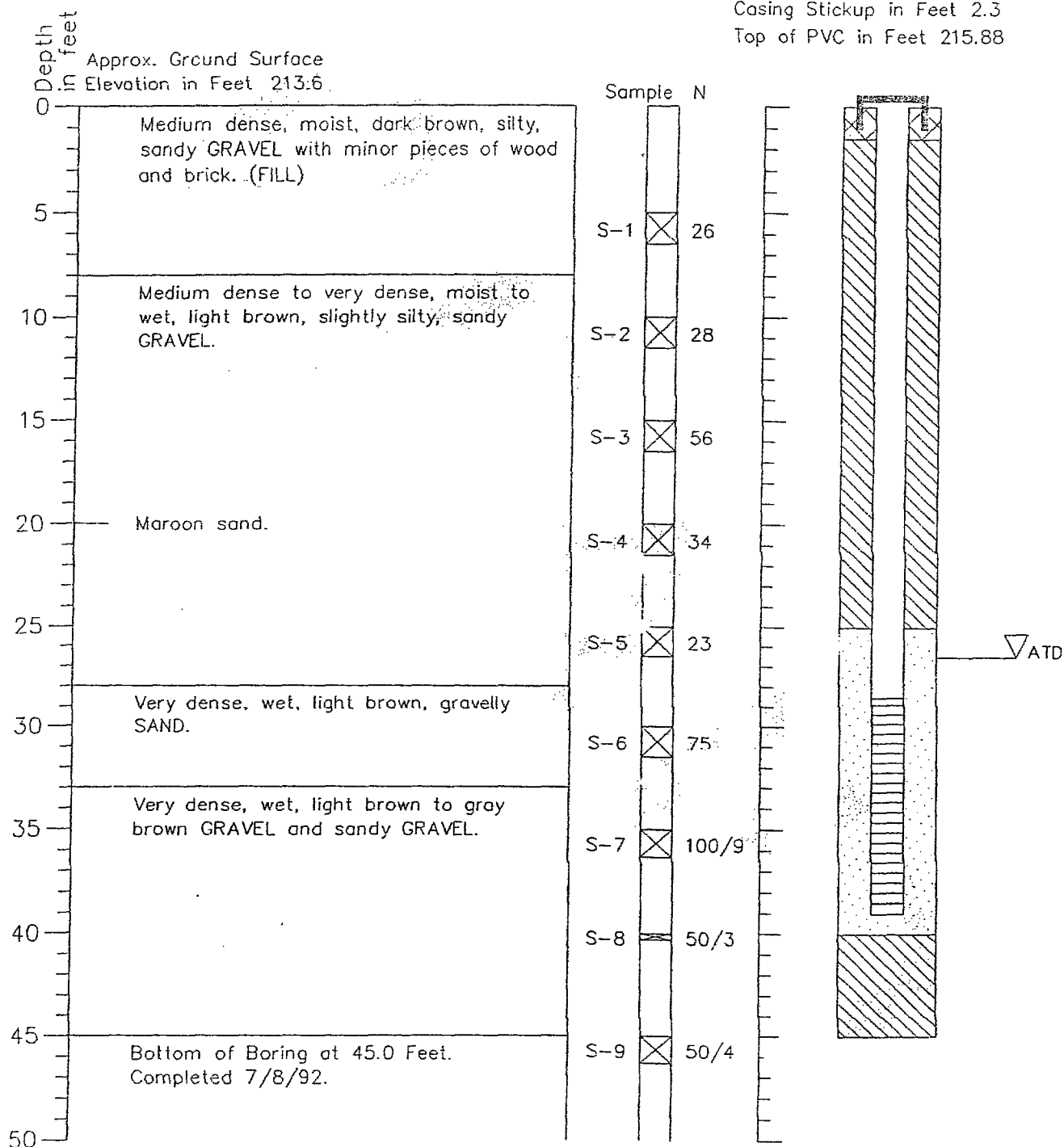
Monitoring Well MW-26

Geologic Log

Monitoring Well Design

Casing Stickup in Feet 2.3

Top of PVC in Feet 215.88



1. Refer to Figure A--1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.



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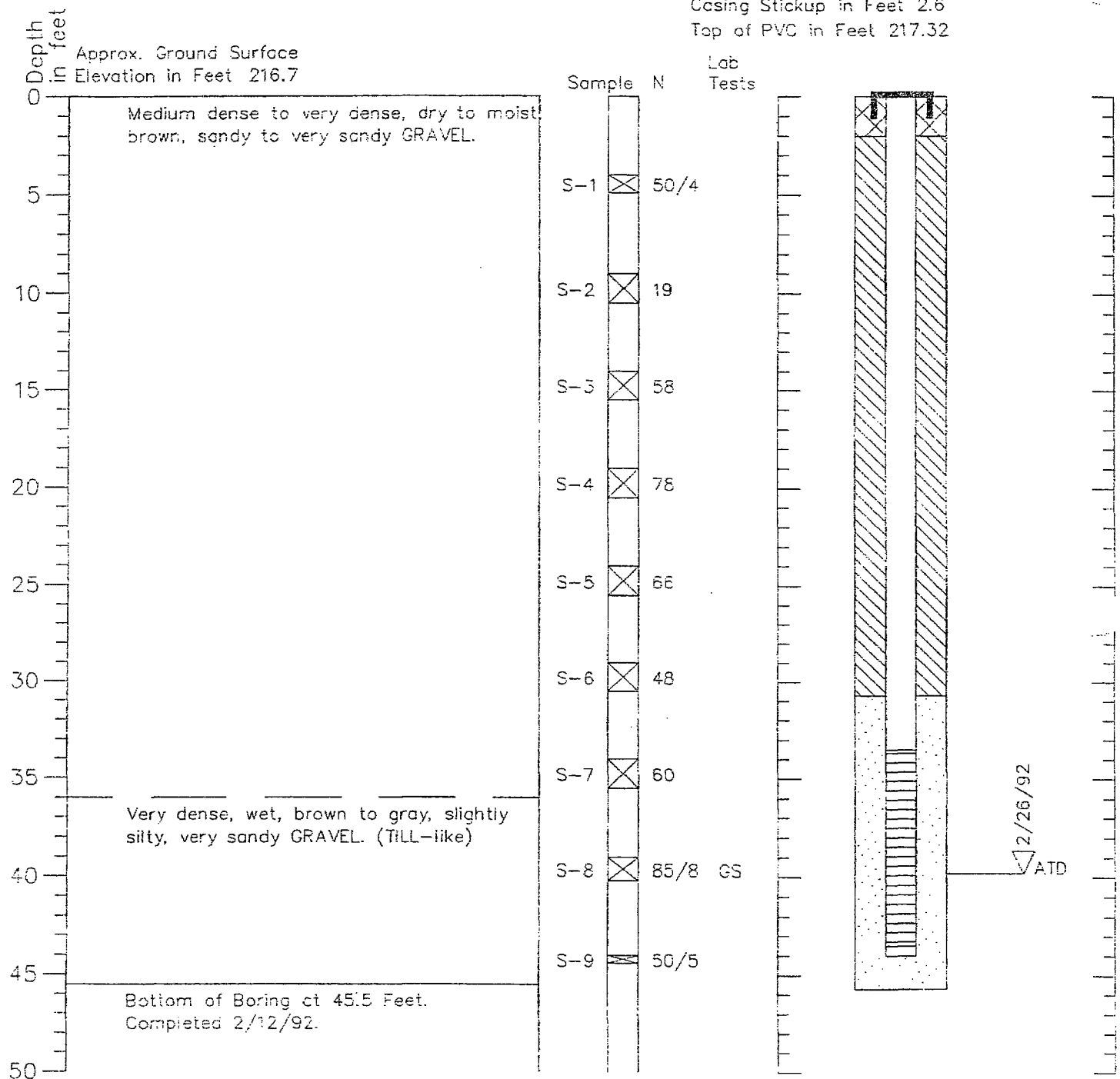
Figure A-MW-7

Boring Log and Construction Data for Monitoring Well MW-27

Geologic Log

Monitoring Well Design

Casing Stickup in Feet 2.6
Top of PVC in Feet 217.32



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Figure A-MW-8

AREA 5
EXPLORATION LOGS

Log of Test Pit 5-TP-501

Ground Surface Elevation Approximately 211.5 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 1.5	(Medium dense), moist, brown, slightly silty, very gravelly SAND with abundant roots.
S-2(R)	3 to 6	5	1.5 to 10	(Dense), moist, gray, sandy GRAVEL (stratified).
S-3(R)	8 to 10	5		

Bottom of 5-TP-501 at 10 feet, completed 2/25/92.

Log of Test Pit 5-TP-502

Ground Surface Elevation Approximately 211.3 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 2.5	(Medium dense), moist, rusty brown, sandy GRAVEL (stratified).
S-2(R)	3 to 6	5	2.5 to 10	(Dense), moist, rusty brown, sandy to slightly sandy GRAVEL, with lens of silty, sandy gravel from 5.5 to 6 feet.
S-3(R)	8 to 10	5		

Bottom of 5-TP-502 at 10 feet, completed 2/25/92.

Note:

Stratification in upper 2.5 feet dips to the west, away from the kettle. Below 2.5 feet, bedding is horizontal.

Log of Test Pit 5-TP-503

Ground Surface Elevation Approximately 162.0 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 2	(Medium dense), moist, brown, gravelly, silty SAND with abundant roots.
S-2(R)	3 to 6	5	2 to 10	(Medium dense), moist, light brown, slightly gravelly SAND with occasional large roots.
S-3(R)	8 to 10	5		

Bottom of 5-TP-503 at 10 feet, completed 2/25/92.

Note:

1.5-foot-long piece of iron strapping encountered at 1-foot depth.

Log of Test Pit 5-TP-504

Ground Surface Elevation Approximately 158.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	NM	0 to 2.5	(Medium dense), moist, tan and brown, slightly gravelly, silty SAND with abundant debris (bricks, can, metal strapping) and potential asbestos-containing material.

Bottom of 5-TP-504 at 2.5 feet, completed 2/26/92.

Note:

5-TP-504 abandoned because of presence of abundant potential asbestos-containing material in upper 1.5 feet. Surface sample 5-SS-501 collected adjacent to abandoned test pit.

Log of Test Pit 5-TP-505

Ground Surface Elevation Approximately 156.5 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 0.5	(Loose), moist, purplish red, vitrified material.
S-2(R)	3 to 6	5	0.5 to 3	(Medium dense), moist, tan and brown, sandy GRAVEL with metal debris (strapping) in upper foot.
			3 to 7	(Medium dense), moist, brownish gray, sandy GRAVEL.
S-3(R)	8 to 10	5	7 to 10	(Dense), moist, gray, gravelly, medium SAND.

Bottom of 5-TP-505 at 10 feet, completed 2/26/92.

Log of Test Pit 5-TP-506

Ground Surface Elevation Approximately 160.0 Feet

Sample Number	Stratum Depth in Feet	Soil Description
No samples collected	0 to 3	(Dense), moist, gray, sandy GRAVEL with drum fragments and purplish red, vitrified material.

Bottom of 5-TP-506 at 3 feet, completed 2/25/92.

Note:

5-TP-506 abandoned because of drum fragments encountered in upper 1.5 feet. Test pit replaced by 5-TP-507.

Log of Test Pit 5-TP-507

Ground Surface Elevation Approximately 157.9 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 1.5	(Medium dense), moist, gray, sandy GRAVEL with abundant purplish red, vitrified material.

Bottom of 5-TP-507 at 1.5 feet, completed 2/25/92.

Note:

5-TP-507 abandoned due to presence of purplish red, vitrified material. Sample S-1 is sample of that material.

Log of Test Pit 5-TP-508

Ground Surface Elevation Approximately 147.1 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	3.5	0 to 1	(Medium dense), moist, brownish red, slightly silty, gravelly SAND with interlayered red SILT and abundant potential asbestos-containing material.

Bottom of 5-TP-508 at 1 foot, completed 3/12/92.

Notes:

- 1) 5-TP-508 was replacement for 5-HA-506 since backhoe access was possible at that location.
- 2) 5-TP-508 was abandoned due to presence of potential asbestos-containing material in upper 1 foot.

Log of Test Pit 5-TP-509

Ground Surface Elevation Approximately 202.8 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5.5	0 to 0.5	(Medium dense), damp, dark brown, slightly silty, slightly sandy GRAVEL with abundant roots and brick debris.
			0.5 to 3.5	(Dense), damp to moist, brown, sandy GRAVEL with occasional roots.
S-2(R)	3 to 6	5	3.5 to 6	(Loose), moist, gray, gravelly, medium SAND.

Bottom of 5-TP-509 at 6 feet, completed 3/12/92.

Note:

5-TP-509 was replacement for 5-HA-511 since backhoe access was possible at that location.

Log of Test Pit 5-TP-510

Ground Surface Elevation Approximately 211.8 Feet

Sample Number	Stratum Depth in Feet	Soil Description
No samples collected	0 to 1.5	(Medium dense), moist, brownish red, slightly silty, sandy GRAVEL with abundant potential asbestos-containing material.

Bottom of 5-TP-510 at 1.5 feet, completed 3/12/92.

Notes:

- 1) 5-TP-510 was second attempt in general location of 5-TP-508.
- 2) 5-TP-510 was abandoned due to presence of potential asbestos-containing material in upper 1 foot.

Log of Hand Auger Boring 5-HA-501

Ground Surface Elevation Approximately 171.6 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 1	(Loose), moist, dark brown, silty, sandy GRAVEL.
S-2(R)	2 to 3	5	1 to 3	(Loose), moist, light brown-gray, sandy GRAVEL.

Bottom of 5-HA-501 at 3 feet, completed 3/12/92.

Note:

5-HA-501 completed within the ditch below the southern of two former drain lines from the acid production area.

Log of Hand Auger Boring 5-HA-502

Ground Surface Elevation Approximately 173.3 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 1.5	(Loose), damp, black-brown, slightly silty, gravelly, medium to fine SAND with minor roots; rusted metal flakes in top 2 inches.
S-2(R)	3 to 4	5	1.5 to 4	(Medium dense), damp, light brown, sandy GRAVEL.

Bottom of 5-HA-502 at 4 feet, completed 3/9/92.

Log of Hand Auger Boring 5-HA-503
Ground Surface Elevation Approximately 174.0 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	4.5	0 to 1	(Loose to medium dense), damp, red-brown, silty, gravelly, medium to fine SAND; abundant rusted metal flake in top 4 inches.
S-2(R)	2 to 3	4.5	1 to 3	(Medium dense), damp, brown, slightly silty, sandy GRAVEL.

Bottom of 5-HA-503 at 3 feet, completed 3/9/92.

Log of Hand Auger Boring 5-HA-504
Ground Surface Elevation Approximately 177.2 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	4.5	0 to 3	(Dense), damp, light brown-gray, slightly sandy GRAVEL to 8-inch diameter.
S-2(R)	2 to 3	4.5		

Bottom of 5-HA-504 at 3 feet, completed 3/9/92.

Note:

5-HA-504 completed within the deep ditch below the northern of two former drain lines (with spillway) from the acid production area.

Log of Hand Auger Boring 5-HA-505

Ground Surface Elevation Approximately 193.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	4	0 to 0.5	(Loose), damp, black, gravelly SAND mixed with cobbles.
			0.5 to 1.5	(Dense), damp, dark brown, sandy GRAVEL.
S-2(R)	2 to 3	4	1.5 to 3.5	(Dense), damp, light brown, sandy GRAVEL.

Bottom of 5-HA-505 at 3.5 feet, completed 3/10/92.

Log of Hand Auger Boring 5-HA-507

Ground Surface Elevation Approximately 176.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	4	0 to 2	(Loose), purplish red, vitrified, granular FILL, with glass fragments and stained cobbles.
S-2(R)	2.5 to 3.5	5	2 to 3.5	(Medium dense), moist, brown, sandy GRAVEL.

Bottom of 5-HA-507 at 3.5 feet, completed 3/10/92.

Log of Hand Auger Boring 5-HA-508

Ground Surface Elevation Approximately 169.6 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	4.5	0 to 3	(Dense), damp, brown, slightly silty, gravelly SAND with minor roots.
S-2(R)	2 to 3	5		

Bottom of 5-HA-508 at 3 feet, completed 3/10/92.

Log of Hand Auger and Boring 5-HA-509

Ground Surface Elevation Approximately 181.5 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 3	(Dense), damp, brown, slightly silty, gravelly, medium to fine SAND; organics in top 2 inches.
S-2(R)	2 to 3	4.5		

Bottom of 5-HA-509 at 3 feet, completed 3/10/92.

Log of Hand Auger Boring 5-HA-510

Ground Surface Elevation Approximately 182.3 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	4	0 to 1	(Loose), damp, dark brown, slightly silty, gravelly, medium to fine SAND.
S-2(R)	2 to 3	4	1 to 3	(Dense), damp, brown, gravelly, medium to fine SAND.

Bottom of 5-HA-510 at 3 feet, completed 3/12/92.

Log of Hand Auger Boring 5-HA-512

Ground Surface Elevation Approximately 189.0 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	4	0 to 1.5	(Loose), moist, black SAND; petroleum odor at 0 to 1 foot; ½ inch of oil on surface; bricks and rusted metal flakes from depths of 1 to 1.5 feet.
			1.5 to 2	(Medium dense), moist, purplish red, granular FILL with cobbles.
S-2(R)	2 to 3	4	2 to 3	(Medium dense), moist, light brown, gravelly SAND.

Bottom of 5-HA-512 at 3 feet, completed 3/26/92.

Log of Hand Auger Boring 5-HA-513

Ground Surface Elevation Approximately 191.0 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 0.5	Moist, dark brown, silty SAND with roots; plastic flakes at surface.
			0.5 to 2	Moist, brown, gravelly SAND.
S-2	2 to 3	5	2 to 3	Moist, orange-brown, sandy GRAVEL, oxidized.

Bottom of 5-HA-513 at 3 feet, completed 3/12/92.

Log of Hand Auger Boring 5-HA-514

Ground Surface Elevation Approximately 197.8 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 3	(Loose), moist, brown, slightly sandy to sandy GRAVEL.
S-2	2 to 3	4		

Bottom of 5-HA-514 at 3 feet, completed 3/12/92.

Log of Hand Auger Boring 5-HA-515

Ground Surface Elevation Approximately 172.4 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4	0 to 1	(Loose), moist, brown, sandy GRAVEL.
S-2	2 to 3	4	1 to 3	(Loose), moist, light brown, silty, medium to fine SAND.

Bottom of 5-HA-515 at 3 feet, completed 3/12/92.

Log of Hand Auger Boring 5-HA-516

Ground Surface Elevation Approximately 194.4 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4	0 to 2.5	(Loose), moist, brown, silty, gravelly, medium to fine SAND.
S-2	2 to 3	4	2.5 to 3	(Dense), moist, light brown, sandy GRAVEL.

Bottom of 5-HA-516 at 3 feet, completed 3/12/92.

Log of Hand Auger Boring 5-HA-517
Ground Surface Elevation Approximately 188.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Medium dense), moist, brown, silty, gravelly, medium to fine SAND.
S-2	2 to 3	5	1 to 3	(Medium dense), moist, light brown, sandy GRAVEL.

Bottom of 5-HA-517 at 3 feet, completed 3/12/92.

AREA 6
EXPLORATION LOGS

Log of Test Pit 6-TP-501

Ground Surface Elevation Approximately 200.3 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2.5	(Medium dense), moist, medium brown, silty, sandy GRAVEL with abundant bricks, mortar, and metal piping (FILL)
S-2	3 to 6	5	2.5 to 6	(Dense), moist, light brown, sandy GRAVEL with abundant bricks and mortar (FILL)
S-3	8 to 10	5	6 to 10	(Dense), moist, light brown, sandy GRAVEL

Bottom of 6-TP-501 at 10 feet, completed 4/20/92.

Notes:

- 1) 4-foot-long, 3-inch-diameter steel casing exposed in side wall of test pit. Casing full of soil.
- 2) Test pit excavated along south side of former Ammonia Nitrate Crystallizer foundation. Concrete wall of foundation extended to depth of 6 feet in north wall of excavation.

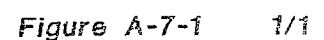
Log of Test Pit 6-TP-502

Ground Surface Elevation Approximately 198.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Medium dense), moist, light brown, very sandy GRAVEL
S-2	3 to 6	5	1 to 10	(Dense), moist, light brown, sandy GRAVEL with interbedded layers of GRAVEL (native)
S-3	8 to 10	5		

Bottom of 6-TP-502 at 10 feet, completed 4/20/92.

AREA 7
EXPLORATION LOGS



Boring Log 7-B-502

Soil Descriptions

Ground Surface Elevation in Feet 172.3

6 inches of black, silty SAND with roots over loose, wet to moist, gray, slightly gravelly, very silty to silty SAND.

Medium dense, moist, gray, sandy GRAVEL with faint sulfurous odor and occasional green staining on gravels.

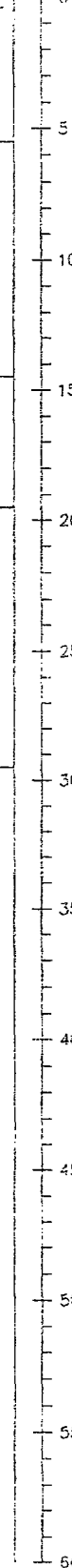
Medium dense, moist, gray, medium to fine SAND.

Dense, to very dense, moist, brownish gray slightly sandy GRAVEL with yellow staining on gravels.

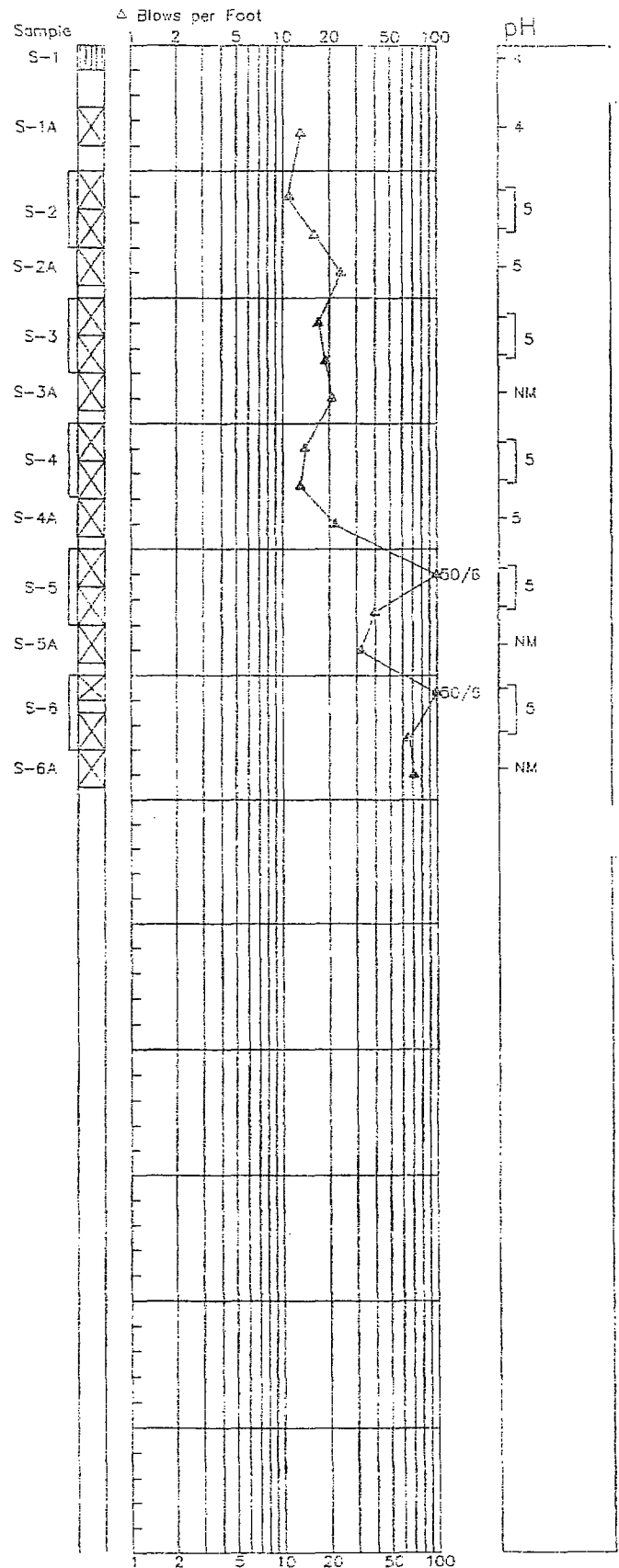
Bottom of Boring at 29.5 Feet.
Completed 2/28/97

Depth

in Feet



STANDARD PENETRATION RESISTANCE



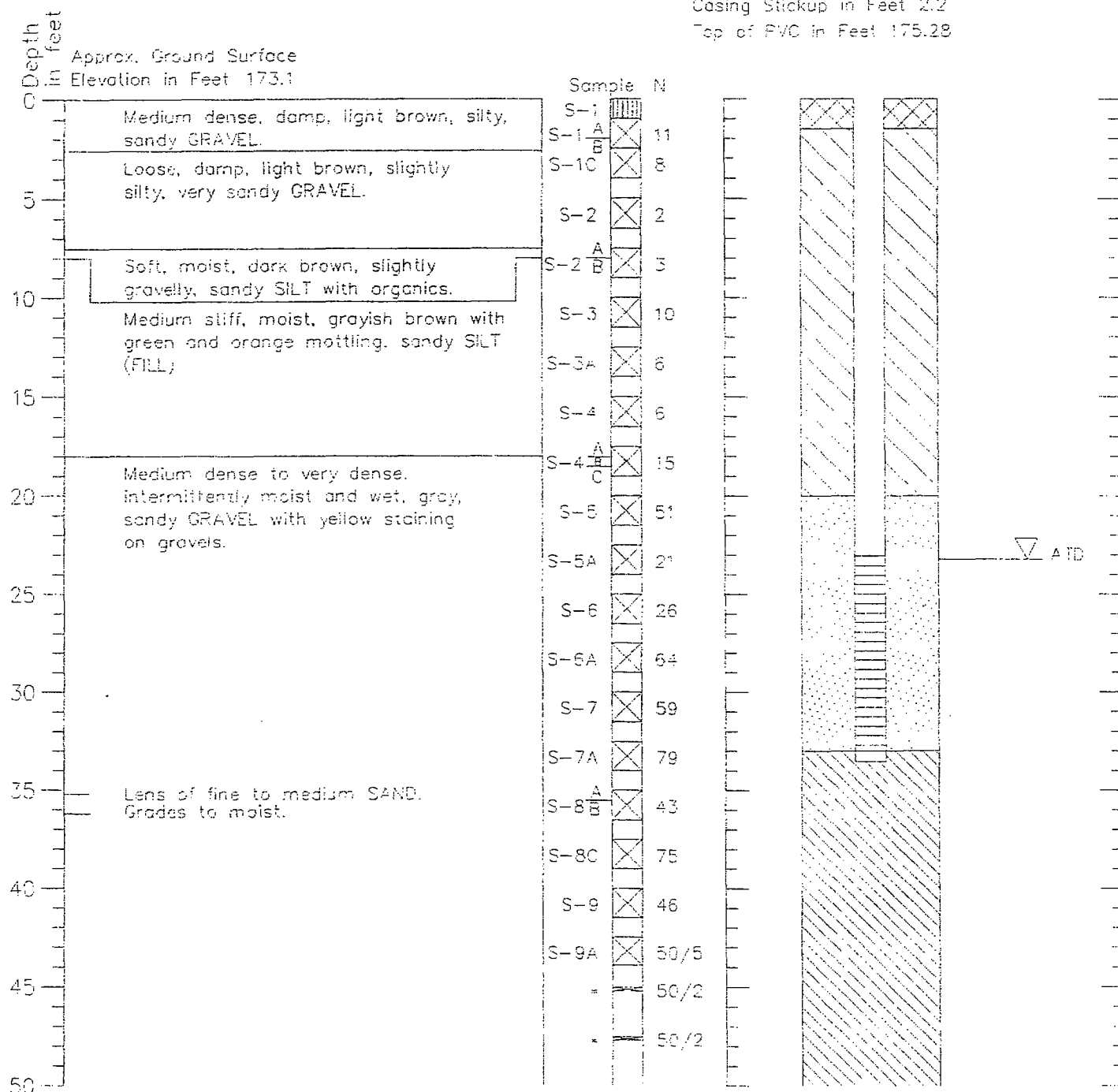
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Boring Log and Construction Data for Monitoring Well 7-B-503

Geologic Log

Monitoring Well Design

Casing Stickup in Feet 2.2
Top of PVC in Feet 175.28



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Figure A-7-3

Boring Log 7-B-504

Soil Descriptions

Ground Surface Elevation in Feet 196.49

Medium dense to very dense, moist, light brown and grayish brown, slightly silty, sandy GRAVEL.

Grades to non-silty.

Bottom of Boring at 50.5 Feet.
Completed 7/17/92

Depth
in Feet

0

5

10

15

20

25

30

35

40

45

50

55

60

Sample

S-1

S-1A

S-1B

S-2

S-3

S-3A

S-4

S-4A

S-5

S-5A

S-6

S-6A

S-7

S-7A

S-8

S-8A

S-9

S-9A

S-10

S-10A

S-11

S-11A

S-11B

S-11C

S-11D

S-11E

S-11F

S-11G

S-11H

S-11I

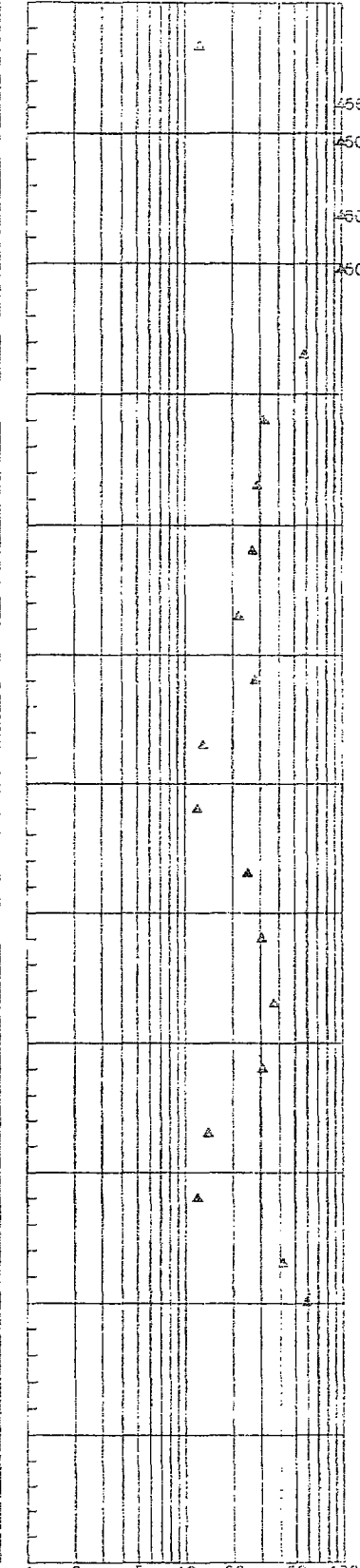
S-11J

STANDARD PENETRATION RESISTANCE

LAB TESTS

Blows per Foot

1 2 5 10 20 50 100



Water Content in Percent

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Log of Test Pit 7-TP-501

Ground Surface Elevation Approximately 185.9 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4	0 to 0.5	(4 inches of forest duff over medium dense), moist, dark brown, sandy GRAVEL with abundant roots and grass.
S-2	3 to 6	4.5	0.5 to 10	(Medium dense), damp, silvery gray, slightly sandy to sandy GRAVEL with boulders to 1 foot and some green staining on gravels. Discontinuous 3-inch-thick layer of Bunker C oil staining at depth of 0.5 foot. Thin gravel lens at depth of 1.5 feet. Distinct zone of yellowish green staining on gravels between depths of 8 and 9 feet.
S-3	8 to 10	4		

Bottom of 7-TP-501 at 10 feet, completed 3/5/92.

Log of Test Pit 7-TP-502

Ground Surface Elevation Approximately 179.4 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	Two inches of grass and organic debris over (medium dense), moist, brown, slightly silty, sandy GRAVEL with abundant roots.
S-2	3 to 6	5	2 to 10	(Medium dense), moist, grayish brown, sandy GRAVEL with 6-inch-thick gravel lens at a depth of 5.5 feet.
S-3	8 to 10	5		

Bottom of 7-TP-502 at 10 feet, completed 3/5/92.

Log of Test Pit 7-TP-503

Ground Surface Elevation Approximately 176.6 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4	0 to 2.5	One inch of grass and organic debris over (medium dense), moist, light brownish gray, sandy GRAVEL with occasional roots. Two-inch-thick lens of moist, black, slightly silty, gravelly SAND at 1.25 feet depth. Four-inch-thick lens of moist, black, silty SAND at 2.5 feet depth.
S-2	3 to 6	4	2.5 to 5	(Medium dense), moist, gray and light brown, very silty, fine SAND.
S-3	8 to 10	4	5 to 10	(Medium dense), moist, gray, sandy GRAVEL with rust and yellow staining between depths of 7 and 9 feet.

Bottom of 7-TP-503 at 10 feet, completed 3/5/92.

Log of Test Pit 7-TP-504

Ground Surface Elevation Approximately 181.5 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4	0 to 2	Four inches of black, silty, slightly gravelly SAND with abundant roots over (loose), moist, brown, slightly gravelly, silty SAND.
			2 to 3.5	(Medium dense), moist, brownish gray, very sandy SILT.
S-2	3 to 6	5	3.5 to 7.5	(Medium dense), moist, brown, very sandy GRAVEL.
S-3	8 to 10	5	7.5 to 10	(Medium dense), moist, brown, gravelly SAND.

Bottom of 7-TP-504 at 10 feet, completed 3/5/92.

Log of Observation Test Pit 7-OB-TP-501
Ground Surface Elevation Approximately 171.7 Feet

Sample Number	Stratum Depth in Feet*	Soil Description
No samples collected	0 to (1-3)	(Loose), damp, gray, silty, sandy GRAVEL (FILL).
	(1-3) to (2-7)	(Soft), moist, gray SILT (Sludge-like FILL), some burnt wood fragments found in upper section of silt layer.
	(2-7) to (5-8)	(Medium dense), moist, gray-brown, sandy GRAVEL (Native?).

Bottom of 7-OB-TP-501 at 8.0 feet, completed 6/29/92.

Notes:

- 1) Observational test pit; no samples collected.
- 2) *: The strata in 7-OB-TP-501 dip in a northerly direction toward middle of kettle. Therefore, stratum top and bottom depths are variable across the excavation, and are indicated with a range of depths in parentheses.
- 3) Test pit excavation approximately 20 feet in length, oriented from southeast corner of kettle toward kettle center.

Log of Observation Test Pit 7-OB-TP-502
Ground Surface Elevation Approximately 181.1 Feet

Sample Number	Sample Depth in Feet	Soil Description
No samples collected		(Loose), damp, gray and bleached white, sandy GRAVEL with slight sulfur odor and area of green and yellow stained rocks at depth of 2 to 4.5 feet in center of excavation. Brown, sandy GRAVEL (appears native) observed in upper 2 feet along western edge of excavation.

Bottom of 7-OB-TP-502 at 6.0 feet, completed 6/29/92.

Notes:

- 1) Observational test pit; no samples collected.
- 2) Observed layer of Bunker C oil staining near surface at southwest end of test pit.
- 3) Test pit excavation approximately 20 feet in length, oriented east-west.

Log of Hand Auger Boring 7-HA-501

Ground Surface Elevation Approximately 201.4 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 3	(Medium dense), damp, light brown, silty, sandy GRAVEL.
S-2	1 to 2		
S-3	2 to 3		

Bottom of 7-HA-501 at 3.0 feet, completed 6/29/92.

Note:

Observed Bunker C oil staining just beneath layer of moss at surface.

Log of Hand Auger Boring 7-HA-502

Ground Surface Elevation Approximately 183.8 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 0.5	(Medium dense), damp, light brown, sandy GRAVEL with grass roots.
S-2	1 to 2	0.5 to 2.0	(Medium dense), damp, gray, sandy GRAVEL.
S-3	2 to 3	2 to 3	(Loose), damp, gray, gravelly SAND with tree roots.

Bottom of 7-HA-502 at 3.0 feet, completed 7/1/92.

Log of Hand Auger Boring 7-HA-503

Ground Surface Elevation Approximately 201.8 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 3	(Medium dense), damp, light brown, silty, sandy GRAVEL
S-2	1 to 2		
S-3	2 to 3		

Bottom of 7-HA-503 at 3.0 feet, completed 6/29/92.

Note:

Observed Bunker C oil staining in upper 3 inches of soil.

Log of Hand Auger Boring 7-HA-504

Ground Surface Elevation Approximately 180.6 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 3	(Medium dense), damp, brown to tan, silty, sandy GRAVEL.
S-2	1 to 2		
S-3	2 to 3		

Bottom of HA-504 at 3.0 feet, completed 6/29/92.

AREA 10
EXPLORATION LOGS

Log of Test Pit 10-TP-501

Ground Surface Elevation Approximately 210 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	0 to 2	(Medium dense), moist, black, slightly silty, sandy GRAVEL with a lid from a 55-gallon drum at surface.
S-2	3 to 6	2 to 7	(Medium dense), moist, tan-brown, sandy GRAVEL
S-3	7 to 9	7 to 9	(Medium dense), moist, tan-brown, slightly gravelly SAND

Bottom of 10-TP-501 at 9 feet, completed 2/24/92.

Log of Test Pit 10-TP-502

Ground Surface Elevation Approximately 210 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	0 to 2	(Medium dense), moist, black, slightly gravelly, silty SAND.
S-2	3 to 6	2 to 4.5	(Medium dense), moist, tan, sandy GRAVEL.
S-3	8 to 9	4.5 to 9	(Medium dense), moist, gray, sandy GRAVEL

Bottom of 10-TP-502 at 9 feet, completed 2/24/92.

Log of Test Pit 10-TP-503

Ground Surface Elevation Approximately 209 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	0 to 1.5	(Medium dense), moist, black, slightly gravelly, silty SAND with water gel bags (see note below).
		1.5 to 3	(Medium dense), moist, tan-brown, slightly silty, gravelly SAND.
S-2	3 to 6	3 to 10	(Medium dense), moist, medium brown, sandy GRAVEL.
S-3	8 to 10		

Bottom of 10-TP-503 at 10 feet, completed 2/24/92.

Note:

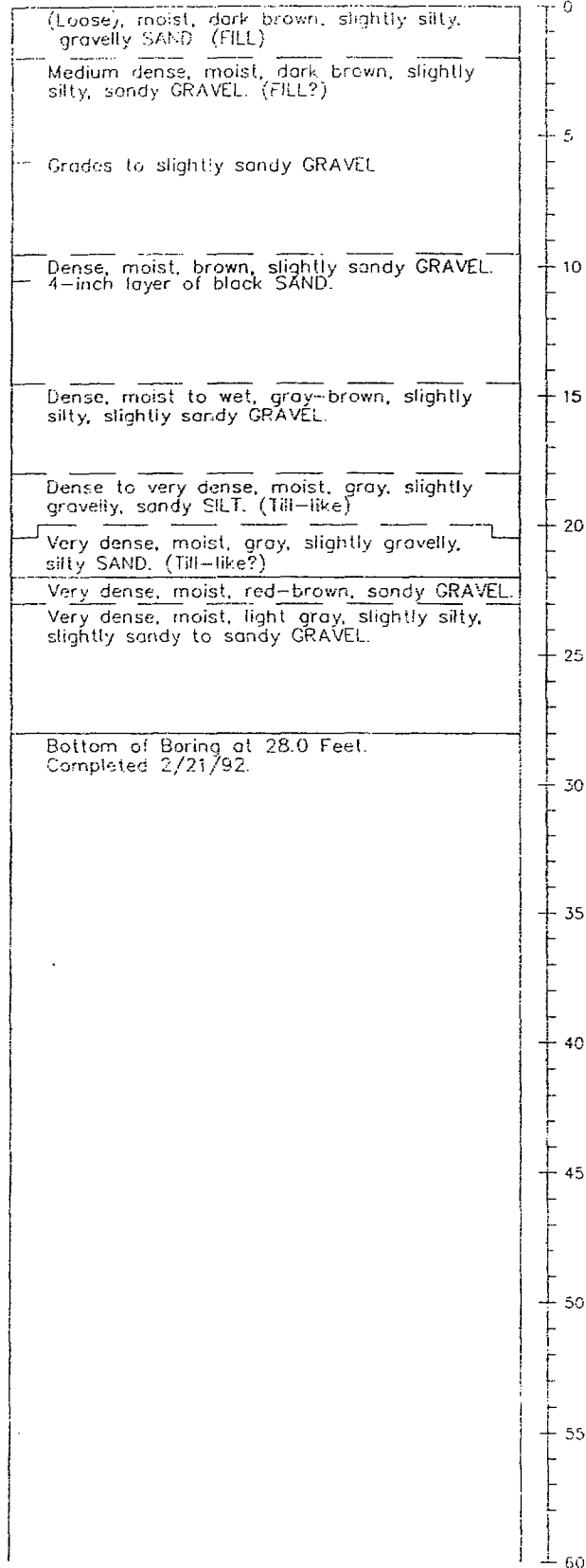
12 water gel bags observed in upper 1.5 feet, some containing apparent residual water gel.

AREA 11
EXPLORATION LOGS

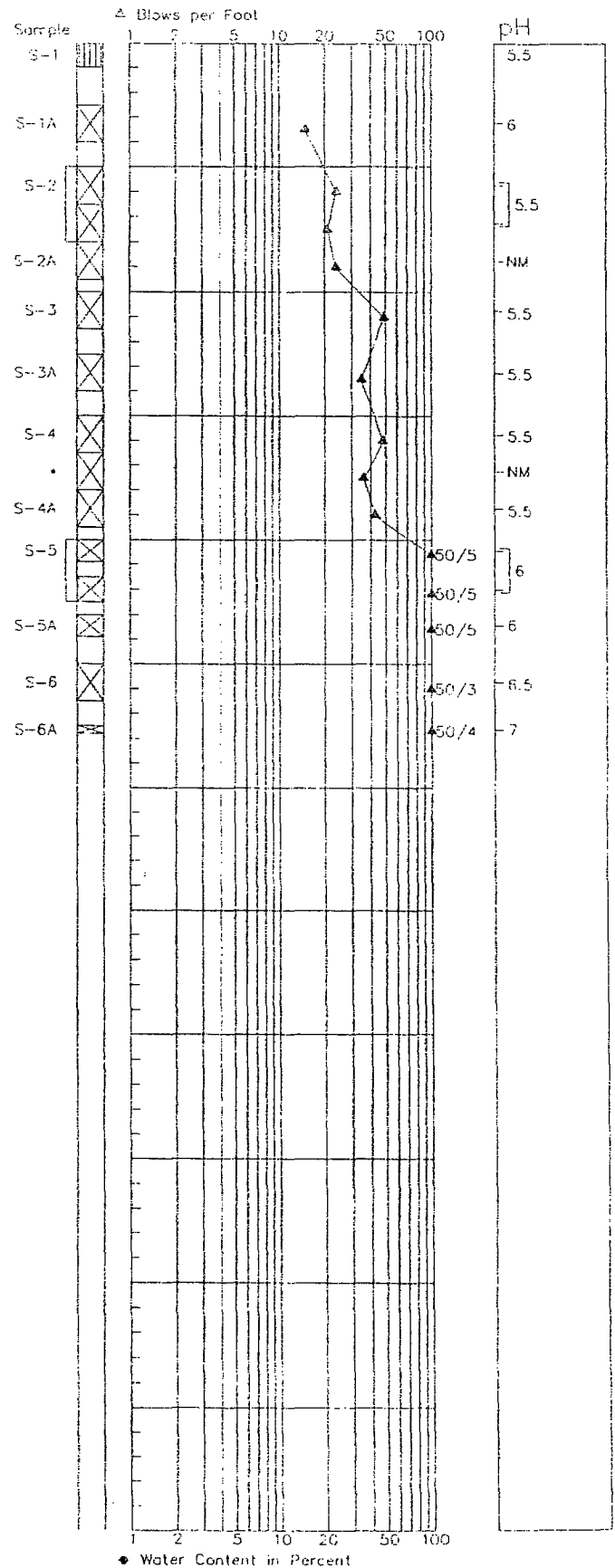
Boring Log 11-B-501

Soil Descriptions

Ground Surface Elevation in Feet 205.7



STANDARD PENETRATION RESISTANCE



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Log of Test Pit 11-TP-501

Ground Surface Elevation Approximately 207 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5.5	0 to 1	(Loose), moist, dark brown, silty SAND with abundant roots.
			1 to 2	(Loose), damp, tan-brown, medium SAND.
S-2	3 to 6	6.0	2 to 7	(Medium dense), damp, yellow-brown, slightly silty, sandy GRAVEL.
			7 to 8	(Medium dense), damp, yellow-brown GRAVEL.
S-3	8 to 10	6.0	8 to 10	(Medium dense), damp, yellow-brown, slightly silty, sandy GRAVEL.

Bottom of 11-TP-501 at 10 feet, completed 2/21/92.

Log of Test Pit 11-TP-502

Ground Surface Elevation Approximately 210 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5.5	1 to 4	(Loose), damp, reddish brown, slightly gravelly, silty SAND with abundant roots.
S-2	3 to 6	6.0	4 to 10	(Medium dense), damp, yellow-brown, sandy GRAVEL. Soils grade to moist below depth of 8 feet.
S-3	8 to 10	6		

Bottom of 11-TP-502 at 10 feet, completed 2/21/92.

Log of Test Pit 11-TP-503

Ground Surface Elevation Approximately 208 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5.5	0 to 1	(Loose), moist, dark brown, gravelly, silty SAND with roots.
S-2	3 to 6	6.0	1 to 3.5	(Medium dense), damp, yellowish brown, sandy GRAVEL.
S-3	8 to 10	6.0	3.5 to 10	(Dense), moist, yellowish brown, slightly sandy GRAVEL with occasional gravel layers.

Bottom of 11-TP-503 at 10 feet, completed 2/21/92.

Log of Test Pit 11-TP-504

Ground Surface Elevation Approximately 210 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5.5	0 to 2.5	(Loose), moist, dark reddish brown, silty SAND with roots and other organics.
S-2	3 to 6	6.0	2.5 to 4	(Medium dense), damp, yellowish brown, sandy GRAVEL with minor roots.
S-3	8 to 10	5.5	4 to 10	(Medium dense), moist to wet, yellowish brown, slightly sandy GRAVEL. Saturated below depth of 8.5 feet.

Bottom of 11-TP-504 at 10 feet, completed 2/21/92.

AREA 12
EXPLORATION LOGS

Boring Log 12-1-B-501

Soil Descriptions

Ground Surface Elevation in Feet 215.3

(Medium dense), moist, dark brown, slightly silty, gravelly to very gravelly SAND.

Loose, moist, brown, very gravelly SAND.

Begin observing abundant plastic water gel bags and scattered sawdust.

Bottom of Boring at 5.5 Feet.
Completed 3/23/92.

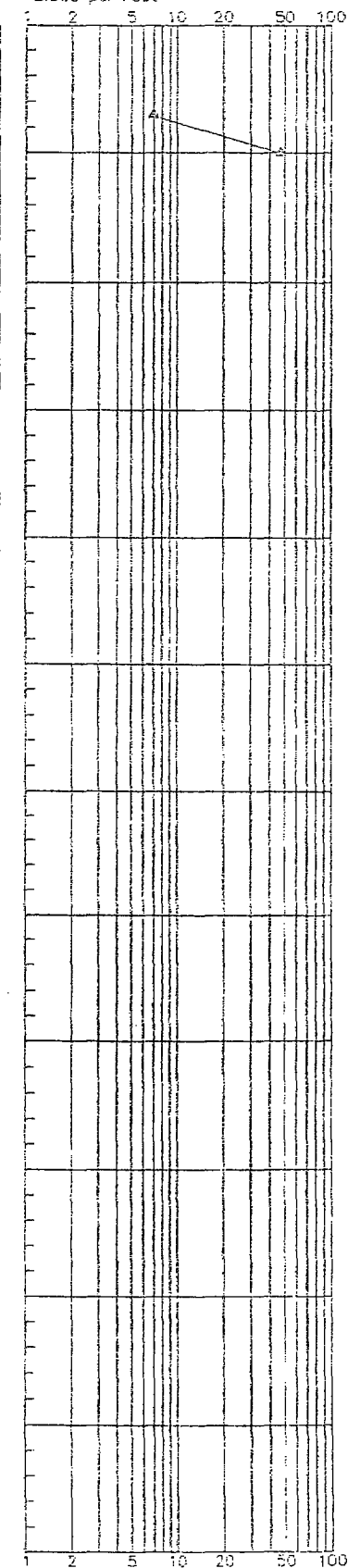
Note: Abandoned boring due to presence of water gel bags. Boring replaced with Boring 12-1-B-501A located 3 feet west.

Depth
in Feet

0
5
10
15
20
25
30
35
40
45
50
55
60

STANDARD PENETRATION RESISTANCE

Blows per Foot



pH

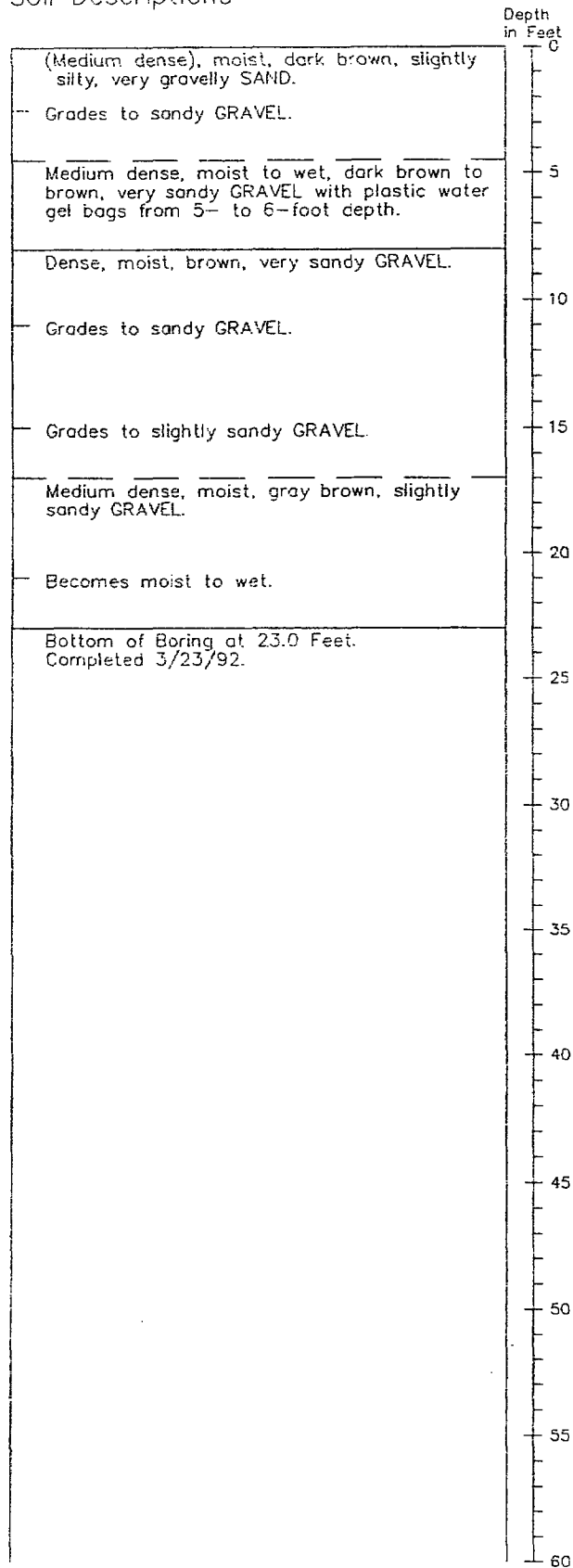
5
5
5

Water Content in Percent

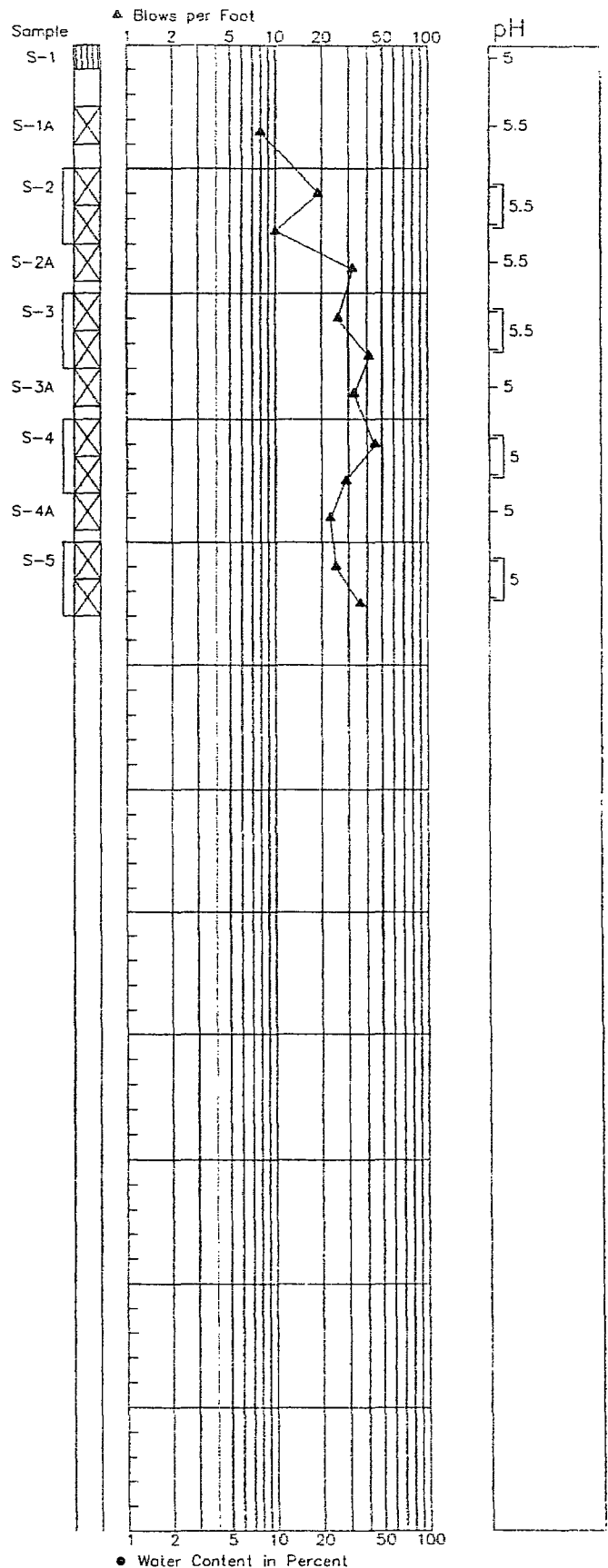
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Boring Log 12-1-B-501A

Soil Descriptions



STANDARD PENETRATION RESISTANCE



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Boring Log 12-2-B-501

Soil Descriptions

Ground Surface Elevation in Feet 215.6

(Medium dense) to dense, moist, black to dark brown, silty, very sandy GRAVEL to sandy GRAVEL with abundant debris (plastic, water gel bags and nylon netting).

Medium dense to dense, moist, grayish brown, sandy GRAVEL with aluminum cans and plastic.

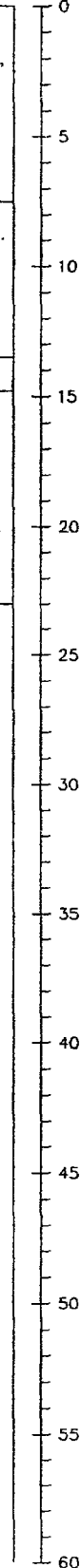
Medium dense, moist, brown, gravelly SAND.

Dense to medium dense, moist, gray-brown, very sandy to sandy GRAVEL.

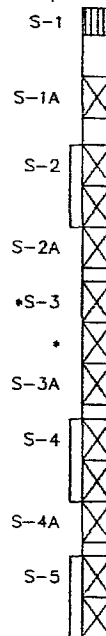
Becomes moist to wet.

Bottom of Boring at 23.0 Feet.
Completed 3/24/92.

Depth
in Feet

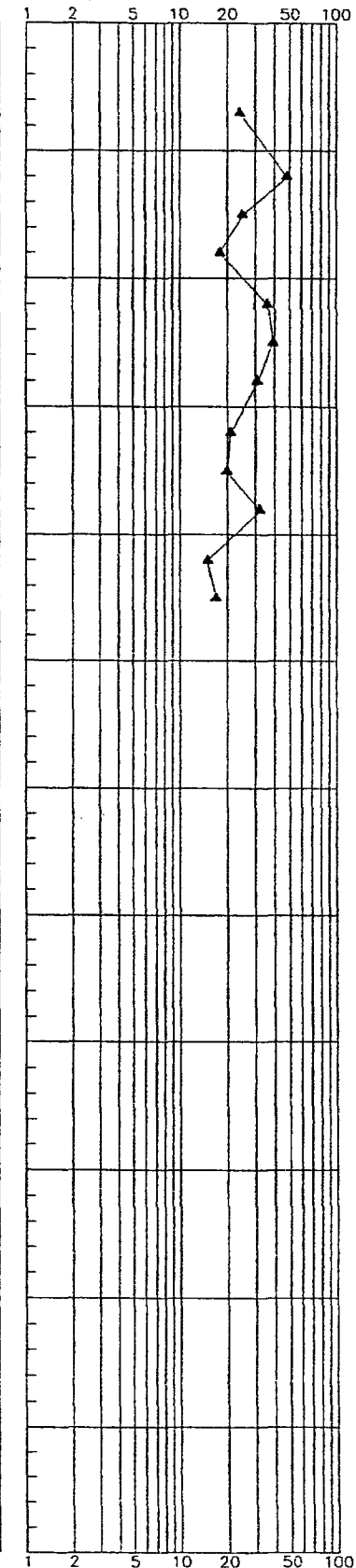


Sample

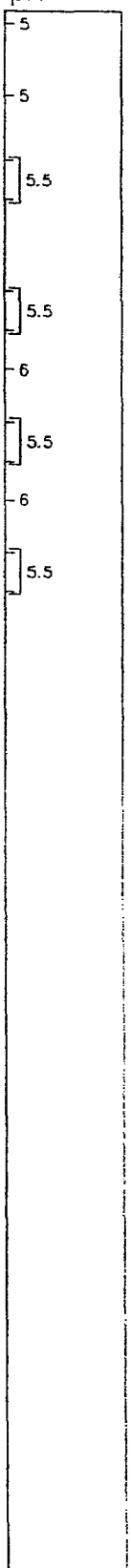


STANDARD PENETRATION RESISTANCE

▲ Blows per Foot



pH



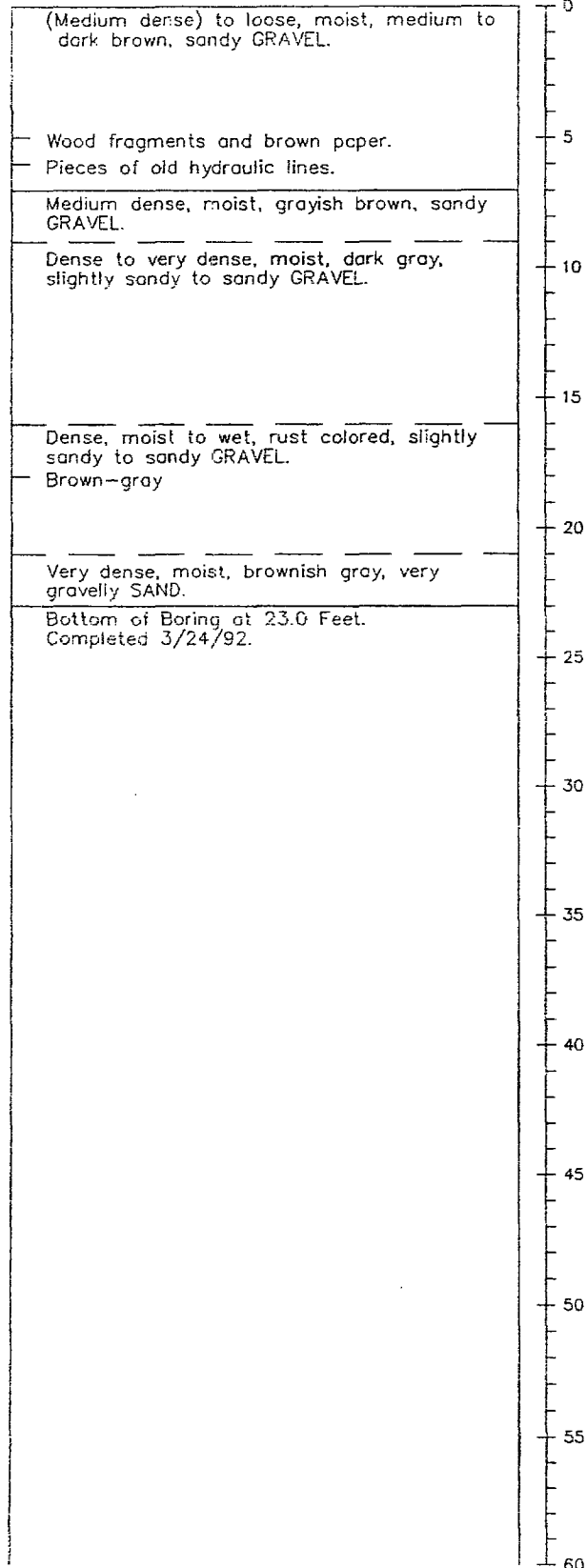
● Water Content in Percent

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

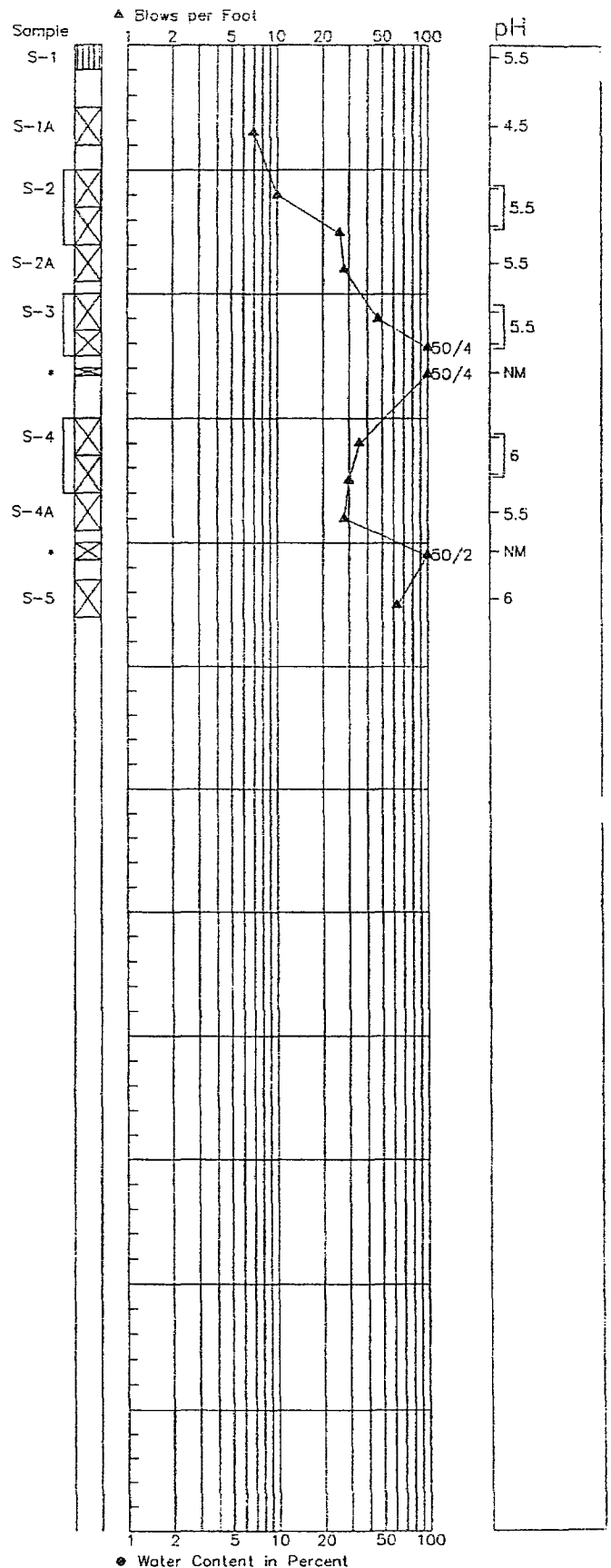
Boring Log 12-2-B-502

Soil Descriptions

Ground Surface Elevation in Feet 213.1



STANDARD PENETRATION RESISTANCE



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Boring Log 12-6-B-501

Soil Descriptions

Ground Surface Elevation in Feet 225.2

Grass sod over (medium dense), moist, dark brown, slightly silty, very gravelly SAND.

Small brick fragments.

Dense, moist, brown, sandy GRAVEL.

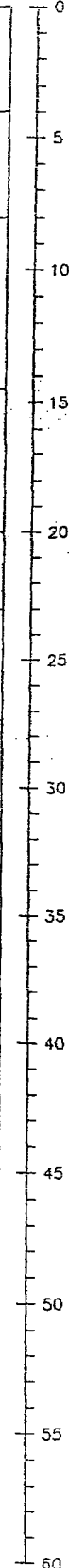
Medium dense, moist to wet, grayish brown, sandy GRAVEL.

Dense, moist, brown, slightly silty, sandy GRAVEL to sandy GRAVEL.

Very dense, moist to wet, brown, slightly silty, medium to fine SAND.

Bottom of Boring at 23.0 Feet.
Completed 3/25/92.

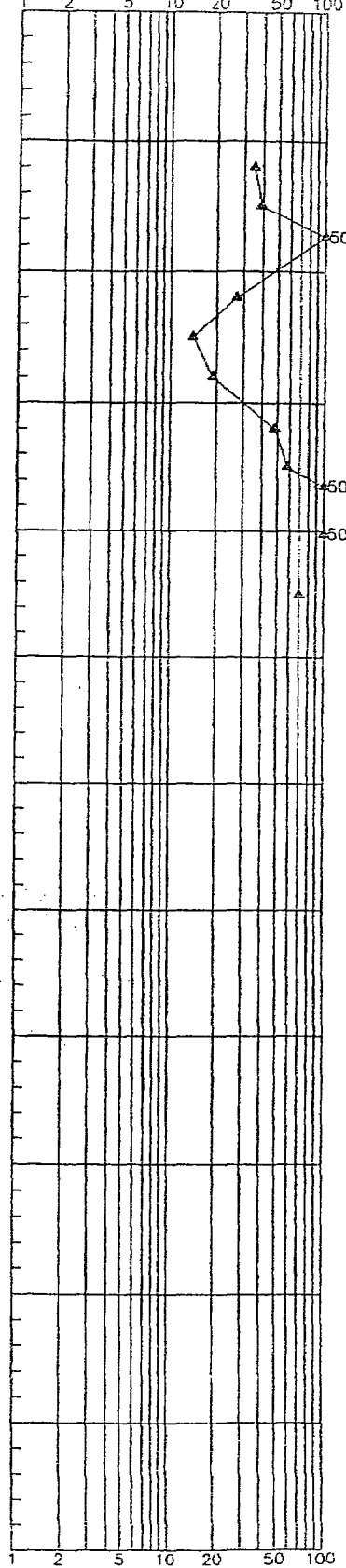
Depth
in Feet



STANDARD PENETRATION RESISTANCE

Blows per Foot

Sample
S-1
S-1A
S-2
S-2A
S-3
S-3A
S-4
S-5



pH

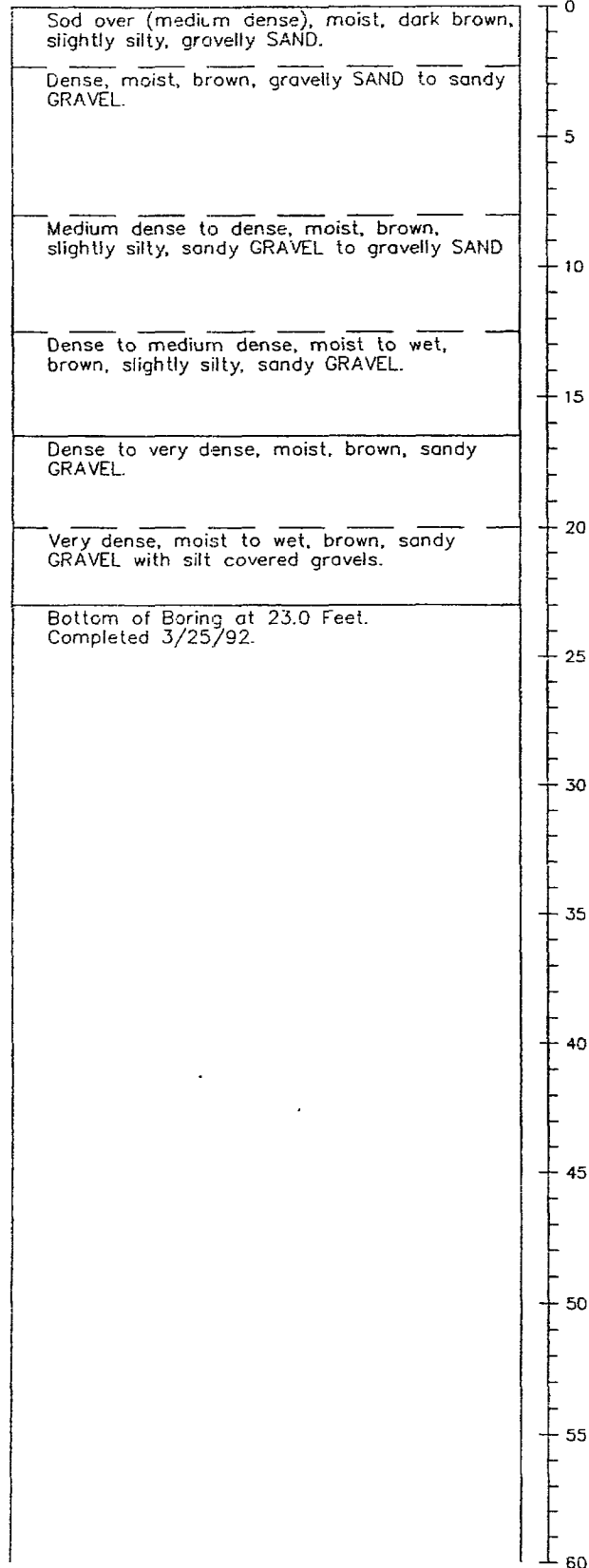
Water Content in Percent

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

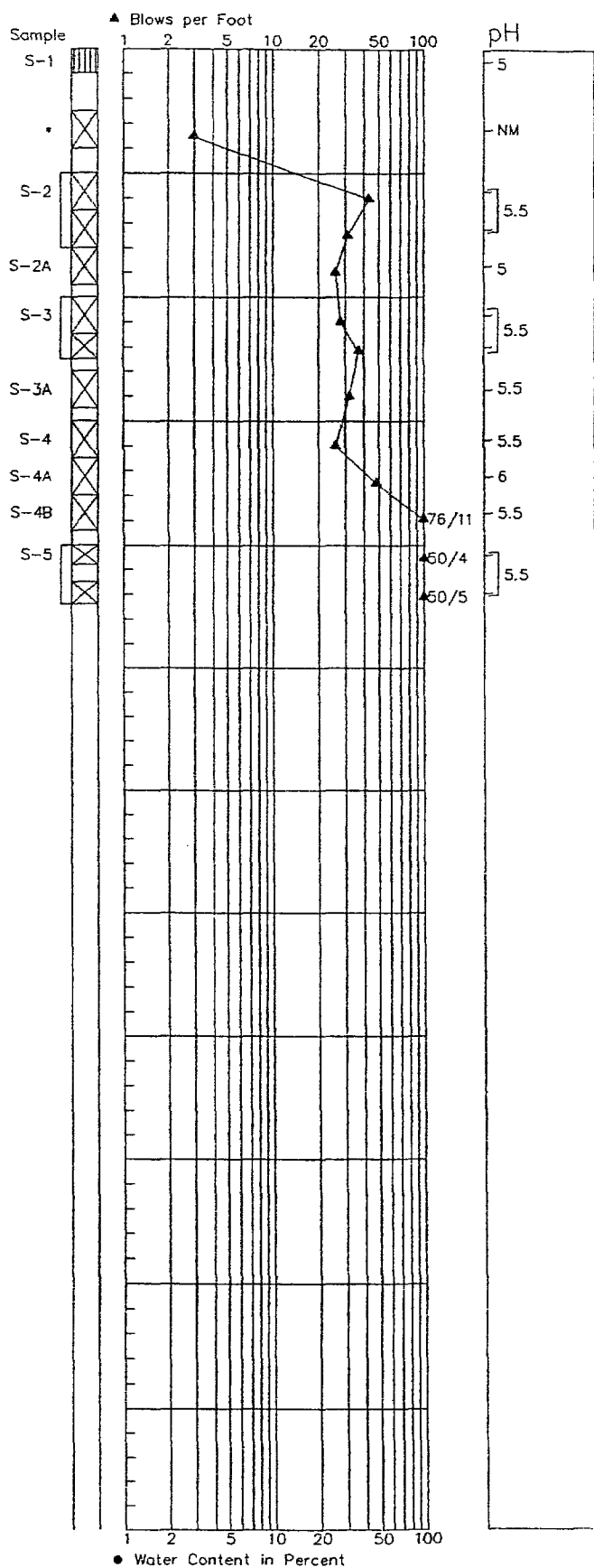
Boring Log 12-7-B-501

Soil Descriptions

Ground Surface Elevation in Feet 225.3



STANDARD PENETRATION RESISTANCE



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Log of Test Pit 12-1-TP-501

Ground Surface Elevation Approximately 215.6 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 0.5	(Loose), moist, dark brown, sandy GRAVEL (FILL).
		0.5 to 2.5	(Loose), moist, brown, sandy GRAVEL with abundant debris (FILL) (see note below).
		2.5 to 3	(Loose), moist, black, silty, sandy GRAVEL (possibly NATIVE).
S-2	3 to 6	3 to 10	(Loose), moist, brown, sandy GRAVEL (NATIVE).
S-3	8 to 10		

Bottom of 12-1-TP-501 at 10 feet, completed 4/13/92.

Notes:

- 1) Debris observed from 1 to 3 feet: apparently empty, white, water gel, plastic bags.
- 2) Observed plastic banding (strapping), steel banding, and plastic 55-gallon drum liners.

Log of Test Pit 12-1-TP-502

Ground Surface Elevation Approximately 215.4 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 0.5	(Loose), moist, dark brown, silty, sandy GRAVEL.
S-2	3 to 6	0.5 to 10	(Loose), moist, brown, slightly sandy GRAVEL with occasional interbedded gravel layers.
S-3	8 to 10		

Bottom of 12-1-TP-502 at 10 feet, completed 4/13/92.

Log of Test Pit 12-1-TP-503

Ground Surface Elevation Approximately 216.3 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 1	(Loose), moist, dark brown, slightly silty, sandy GRAVEL.
S-2	3 to 6	1 to 10	(Loose), moist, brown, slightly sandy, cross-bedded GRAVEL.
S-3	8 to 10		

Bottom of 12-1-TP-503 at 10 feet, completed 4/13/92.

Log of Test Pit 12-1-TP-504

Ground Surface Elevation Approximately 214.2 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 1.5	(Loose), moist, black, silty, gravelly SAND.
S-2	3 to 6	1.5 to 10	(Loose), moist, medium brown, slightly sandy GRAVEL with cross-bedded gravel layers.
S-3	8 to 10		

Bottom of 12-1-TP-504 at 10 feet, completed 4/13/92.

Log of Observation Test Pit 12-1-OB-TP-501

Ground Surface Elevation Approximately 217.2 Feet

Sample Number	Stratum Depth in Feet	Soil Description
Not Sampled	0 to 1.5	6 inches of grass sod with scattered white plastic over water gel bags (empty) over (medium dense), moist, black, slightly silty, very gravelly SAND with moderate organics (roots, etc.) (NATIVE).
	1.5 to 3	(Dense), moist, brown, sandy to very sandy GRAVEL (NATIVE).

Bottom of 12-1-OB-TP-501 at 3 feet, completed 4/14/92.

Notes:

- 1) Soils appear native below 0.5 foot.
- 2) No samples collected (observational test pit).

Log of Observation Test Pit 12-1-OB-TP-502
Ground Surface Elevation Approximately 218.0 Feet

Sample Number	Stratum Depth in Feet	Soil Description
No Samples Collected	0 to 1.5	Six inches of grass sod with clear plastic bag, old tire, and logging debris over (medium dense), moist, black, slightly silty, gravelly SAND with moderate organics (NATIVE).
	1.5 to 3	(Dense), moist, brown, sandy GRAVEL (NATIVE).

Bottom of 12-1-OB-TP-502 at 3 feet, completed 4/14/92.

Notes:

- 1) Soils below 0.5 foot appear native.
- 2) No residual water gel noted in empty plastic bag.
- 3) No samples collected (observational test pit).

Log of Observation Test Pit 12-1-OB-TP-503
Ground Surface Elevation Approximately 221.7 Feet

Sample Number	Stratum Depth in Feet	Soil Description
No Samples Collected	0 to 1.7	6 inches of sod with one plastic water gel bag, partially exposed, over (medium dense), moist, black, slightly silty, gravelly SAND (NATIVE).
	1.7 to 3.5	(Dense), moist, brown, very sandy GRAVEL (NATIVE).

Bottom of 12-1-OB-TP-503 at 3.5 feet, completed 4/14/92.

Notes:

- 1) Soils appear native below 0.5 foot.
- 2) No residual water gel in empty plastic bag.
- 3) No samples collected (observational test pit).

Log of Test Pit 12-2-TP-501

Ground Surface Elevation Approximately 214.7 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 7	(Loose), moist, black and brown, stratified, sandy GRAVEL with abundant debris (FILL) (see note below).
S-2	3 to 6		
		7 to 8	(Loose), moist, black, silty, sandy GRAVEL (possibly NATIVE).
S-3	8 to 10	8 to 10	(Loose), moist, brown, sandy GRAVEL (NATIVE).

Bottom of 12-2-TP-501 at 10 feet, completed 4/13/92.

Note:

Debris observed from 1.5 to 7.3 feet: old truck tire, assorted metal debris, metal banding, potential asbestos-containing material, plastic bags (unmarked), 2-inch-diameter rubber hose, tin and aluminum cans, foam rubber, plastic banding, various rubber and paper debris, wood debris (RR ties), abundant stacks of wax-covered cardboard, and a firehose.

Log of Test Pit 12-2-TP-502

Ground Surface Elevation Approximately 214.4 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 6.5	(Medium dense), moist, dark brown, sandy GRAVEL with roots in top foot and abundant debris (FILL) (see note below).
S-2	3 to 6	4		
S-3	8 to 10	4	6.5 to 10	(Medium dense), moist, light brown, sandy GRAVEL (NATIVE).

Bottom of 12-2-TP-502 at 10 feet, completed 4/14/92.

Note:

Debris observed included abundant plastic strapping and a few clear plastic bags from depth of 1 to 3.5 feet. Plastic bag with scraps of metal, apparently a drum liner with a lid, from depth of 4 to 6 feet. No residual water gel observed in bags.

Log of Test Pit 12-2-TP-503

Ground Surface Elevation Approximately 215.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4	0 to 1	(Medium dense), moist, brownish gray, sandy GRAVEL, with small scraps of cloth (FILL).
S-2	2 to 4	4	1 to 7	(Medium dense), moist, dark brown-black, sandy GRAVEL, with abundant debris (FILL) (see Note 1 below).
S-3	2.5	4		
S-4	4 to 6	5.5		
S-5	8 to 10	5.5	7 to 10	(Medium dense), moist, tan-brown, sandy GRAVEL (NATIVE).

Bottom of 12-2-TP-503 at 10 feet, completed 4/14/92.

Notes:

- 1) Debris observed from depth of 1 to 6 feet: few boards (1.5 feet long) with some plastic-coated paper, drum liner, old smashed drum (scraps of metal mesh and strapping) which had no odor or product, abundant clear plastic, some water gel bags (one bag had apparent residual water gel present), lump of grayish clay, pieces of plywood, yellow (resin-like) substance, old tire, rope fibers, empty white water gel bags, and assorted wood debris.
- 2) Sample S-3 was a discrete sample near apparent residual water gel.

Log of Test Pit 12-2-TP-504

Ground Surface Elevation Approximately 217.6 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 3	(Medium dense), moist, black, slightly silty, very sandy GRAVEL with roots from 0 to 1 foot and debris (FILL) (see note below).
S-2	3 to 6	5	3 to 10	(Medium dense), moist, tan-brown, sandy GRAVEL with interbedded gravel layers (NATIVE).
S-3	8 to 10	4		

Bottom of 12-2-TP-504 at 10 feet, completed 4/14/92.

Note:

Debris observed from depth of 1.5 to 3.0 feet: old log, few pieces of metal strapping, and a knotted ball of black plastic strapping.

Log of Test Pit 12-2-TP-505

Ground Surface Elevation Approximately 213.9 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 9	(Medium dense), moist, dark brown, sandy GRAVEL with debris and noticeable creosote odor (FILL) (see note below).
S-2	3 to 6	4.5		
S-3	9 to 10	4.5	9 to 10	(Medium dense), moist, medium gray, sandy GRAVEL (NATIVE).

Bottom of 12-2-TP-505 at 10 feet, completed 4/14/92.

Note:

Debris observed from depth of 1 to 3 feet: many wooden posts (strong creosote odor), 6-foot-long rubber hose, metal banding, occasional tin cans and scraps of plastic, sheets of plastic, and thick cardboard.

Log of Test Pit 12-2-TP-506

Ground Surface Elevation Approximately 213.9 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 6	(Medium dense), moist, black, silty, gravelly SAND with debris from 1.3 to 6 feet (FILL) (see note below).
S-2	3 to 6	4.5		
S-3	8 to 10	4.5	6 to 10	(Medium dense), moist, brown, sandy GRAVEL (NATIVE).

Bottom of 12-2-TP-506 at 10 feet, completed 4/15/92.

Note:

Debris observed from depth of 1.3 to 6 feet: abundant cardboard, 4-inch-diameter pipe (plastic and steel), concrete, plaster, tin cans, steel garbage can, and aluminum roofing; decomposing cardboard had hydrogen sulfide odor.

Log of Observation Test Pit 12-2-OB-TP-501
Ground Surface Elevation Approximately 210.3 Feet

Sample Number	Stratum Depth in Feet*	Soil Description
No Samples Collected	0 to (0.8- 1.5)	(Medium dense), moist, black, slightly silty, gravelly SAND with black, 3/4-inch rusted steel banding at approximately 0.5 foot (FILL).
	(0.8-1.5) to 2	(Dense), moist, brown, very gravelly SAND (NATIVE).

Bottom of 12-2-OB-TP-501 at 2.0 feet, completed 4/14/92.

Notes:

- 1) *: Fill/native soil contact dips toward the east (contact depth at 0.8 foot at west end of pit; 1.5 feet at east end). Variable depths across test pit indicated as range in parentheses.
- 2) No samples collected (observational test pit).

Log of Observation Test Pit 12-2-OB-TP-502
Ground Surface Elevation Approximately 209.3 Feet

Sample Number	Stratum Depth in Feet	Soil Description
No Samples Collected	0 to 0.5	(Medium dense), moist, black, slightly silty, gravelly SAND (FILL?).
	0.5 to 2.5	(Dense), moist, brown, very sandy, stratified GRAVEL and very gravelly SAND (NATIVE).

Bottom of 12-2-OB-TP-502 at 2.5 feet, completed 4/14/92.

Notes:

- 1) Soils below 0.5 foot appear native.
- 2) No residual water gel observed in empty water gel bag located on surface next to excavation.
- 3) No samples collected (observational test pit).

Log of Observation Test Pit 12-2-OB-TP-503
Ground Surface Elevation Approximately 212.3 Feet

Sample Number	Stratum Depth in Feet	Soil Description
No Samples Collected	0 to 0.8	(Medium dense), moist, black, slightly silty, gravelly SAND (appears disturbed - FILL?).
	0.8 to 2.5	(Dense), moist, brown, very sandy GRAVEL (appears NATIVE).

Bottom of 12-2-OB-TP-503 at 2.5 feet, completed 4/14/92.

Note:

No samples collected (observational test pit).

Log of Observation Test Pit 12-2-OB-TP-504
Ground Surface Elevation Approximately 214.0 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	1 to 2	5	0 to 1.5	(Medium dense), moist, brown, sandy GRAVEL with debris from 0.5 to 1.5 feet (FILL) (see Note 1 below).
S-2	2 to 4	5	1.5 to 2.5	(Medium dense), moist, black, slightly silty, gravelly SAND with wood debris (FILL).
			2.5 to 6	(Medium dense), moist, dark brown, sandy to very sandy GRAVEL with minor debris (FILL) (see Note 2 below).
S-3	6 to 7	5	6 to 7	(Dense), moist, brown, very sandy GRAVEL (NATIVE).

Bottom of 12-2-OB-TP-504 at 7 feet, completed 4/15/92.

Notes:

- 1) Debris found from depth of 0.5 to 1.5 feet: flat waxed cardboard boxes and three unlabeled empty plastic drum liners.
- 2) Debris found from depth of 2.5 to 6.0 feet: scattered waxed cardboard pieces, plastic banding, and white plastic up to 6 by 6 inches.

Log of Observation Test Pit 12-2-OB-TP-505
Ground Surface Elevation Approximately 215.6 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	1 to 2	5	0 to 5.5	(Loose), moist, brown and black (interbedded), sandy GRAVEL with debris (FILL) (see note below).
S-2	2 to 4	5		
S-3	5.5 to 6.5	5	5.5 to 6.5	(Medium dense), moist, brown, sandy GRAVEL (NATIVE).

Bottom of 12-2-OB-TP-505 at 6.5 feet, completed 4/15/92.

Note:

Debris observed from depth of 0.6 to 5.5 feet: bottles and cans, metal banding, wood debris, one 5-gallon can (crushed), plastic, thick cardboard, and apparently empty water gel bags.

Log of Test Pit 12-3-TP-501

Ground Surface Elevation Approximately 217.4 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet*	Soil Description
S-1	0 to 1	4.5	0 to (2 - 4)	(Loose), black, moist, silty, gravelly SAND with debris (FILL) (see Note 1 below).
S-2	2 to 4	4.5		
S-3	8 to 10	4.5	(2 - 4) to 10	(Medium dense), moist, brown, sandy GRAVEL (NATIVE).

Bottom of 12-3-TP-501 at 10 feet, completed 4/15/92.

Notes:

- 1) Debris observed from depth of 0.5 to 4 feet: water gel bags containing residual water gel, wood debris (timbers), 55-gallon drum plastic liners, metal and plastic banding, strips of plastic, and white chalk-like material ("possibly nitric emulsion" per former DuPont employee).
 - 2) Debris appeared to be approximately 60% of fill material from depth of 0.5 to 6 feet.
- *: Fill/native soil contact depth is variable within excavation from 2 feet near east and west edges of pit to 4 feet in pit center. Depth range across test pit is indicated in parentheses.

Log of Test Pit 12-3-TP-502

Ground Surface Elevation Approximately 217.6 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 6	(Loose), moist, black, silty, sandy GRAVEL mixed with debris (FILL) (see Note 1 below).
S-2	2 to 4	4.5		
S-3	4 to 6	4.5		
S-4	8 to 10	4.5	6 to 10	(Medium dense), moist, brown, sandy GRAVEL (NATIVE).

Bottom of 12-3-TP-502 at 10 feet, completed 4/15/92.

Notes:

- 1) Debris observed from depth of 0.5 to 6 feet: water gel bags with small quantities of residual water gel, minor wood debris, green plastic tubes (4-inch-diameter), cardboard, and metal banding.
- 2) Small amount of water accumulation at 6 feet due to water retention in the plastic debris.
- 3) Debris observed to be confined to former trench. Native soil observed on east and west sides of test pit, surrounding the former trench.

Log of Test Pit 12-3-TP-503

Ground Surface Elevation Approximately 216.8 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 6	(Loose), black, moist, silty, sandy GRAVEL mixed with debris (FILL) (see Note 1 below).
S-2	3 to 6	4.5		
S-3	8 to 10	4.5	6 to 10	(Dense), moist, brown, sandy GRAVEL (NATIVE).

Bottom of 12-3-TP-503 at 10 feet, completed 4/15/92.

Notes:

- 1) Debris observed from depth of 0.5 to 6 feet: white and clear plastic apparently empty water gel bags, minor cardboard, wood debris, 1-inch-diameter plastic tubing, one empty fertilizer paper bag.
- 2) Debris observed to be confined to former trench. Native soil observed on east and west sides of test pit, surrounding the former trench.

Log of Observation Test Pit 12-3-OB-TP-501
Ground Surface Elevation Approximately 217.1 Feet

Sample Number	Stratum Depth in Feet	Soil Description
No Samples Collected	0 to 2	(Medium dense), moist, black, slightly silty, very sandy GRAVEL with roots and minor metal and plastic scraps in north end of excavation (FILL).
	2 to 2.7	(Medium dense), moist, tan-brown, sandy GRAVEL (NATIVE).

Bottom of 12-3-OB-TP-501 at 2.7 feet, completed 4/16/92.

Notes:

- 1) No samples collected (observational test pit).
- 2) North wall of excavation appears to be the end of landfill trench.

Log of Observation Test Pit 12-3-OB-TP-502
Ground Surface Elevation Approximately 217.7 Feet

Sample Number	Stratum Depth in Feet	Soil Description
No Samples Collected	0 to 1.8	(Medium dense), moist, black, slightly silty, sandy GRAVEL (FILL?).
	1.8 to 2.7	(Medium dense), moist, tan-brown, sandy GRAVEL (NATIVE).

Bottom of 12-3-OB-TP-502 at 2.7 feet, completed 4/16/92.

Note:

Apparent FILL material (no debris observed) is confined to center of test pit. Native soils (brown, sandy GRAVEL) observed on east and west sides of apparent FILL material.

Log of Test Pit 12-4-TP-501

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 1	Approximately 1 foot of organic debris (old logs and branches) over (medium dense), moist, light brown, very sandy GRAVEL.
S-2	3 to 6	4.5	1 to 7.5	(Medium dense to dense), moist, medium gray, slightly sandy GRAVEL with interbedded gravel layers with cobbles up to 10 inches.
S-3	8 to 10	4.5	7.5 to 9	(Very dense), moist, tan-brown, sandy GRAVEL.

Bottom of 12-4-TP-501 at 9 feet, completed 4/16/92.

Log of Test Pit 12-5-TP-501

Ground Surface Elevation Approximately 226.6 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 6	One inch of grass over (medium dense), moist, dark brown, slightly silty, sandy GRAVEL with roots to a depth of 2 feet and minor debris (FILL) (see note below).
S-2	3 to 6	4.5		
			6 to 8	(Medium dense), moist, tan-brown, sandy GRAVEL (NATIVE).
S-3	8 to 10	4.5	8 to 10	(Medium dense), moist, light tan, sandy GRAVEL.

Bottom of 12-5-TP-501 at 10 feet, completed 4/16/92.

Note:

Chunks of compressed paper (cardboard) observed from depth of 5 to 6 feet.

Log of Test Pit 12-5-TP-502

Ground Surface Elevation Approximately 222.6 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 5.5	One inch of grass over (medium dense), moist, dark brown to black, slightly silty, very sandy GRAVEL with minor debris (FILL) (see note below).
S-2	3 to 5.5	4.5		
			5.5 to 7	(Medium dense), moist, medium gray, sandy GRAVEL (NATIVE).
S-3	8 to 10	4.5	7 to 10	(Medium dense), moist, light brown, slightly sandy GRAVEL (NATIVE).

Bottom of 12-5-TP-502 at 10 feet, completed 4/16/92.

Note:

Debris observed from depth of 2 to 4 feet: layers of compressed cardboard and plastic strapping.

Log of Test Pit 12-5-TP-503

Ground Surface Elevation Approximately 223.5 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 4	(Medium dense), moist, dark brown, silty, very sandy GRAVEL with debris (FILL) (see note below).
S-2	2 to 4	4.5		
S-3	4 to 6	5.0	4 to 10	(Medium dense), moist, brown, sandy GRAVEL with gravel layers.

Bottom of 12-5-TP-503 at 10 feet, completed 4/17/92.

Note:

Observed abundant decomposed cardboard explosives packaging from depth of 1 to 4 feet.

Log of Test Pit 12-6-TP-501

Ground Surface Elevation Approximately 225.6 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.5	(Medium dense), moist, dark brown, silty, sandy GRAVEL.
S-2	3 to 6	5	1.5 to 6.5	(Loose), moist, brown GRAVEL.
S-3	8 to 10	5	6.5 to 10	(Medium dense), moist, light brown, sandy GRAVEL.

Bottom of 12-6-TP-501 at 10 feet, completed 4/17/92.

Log of Test Pit 12-6-TP-502

Ground Surface Elevation Approximately 225.1 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 8	(Medium dense), moist, dark brown, silty, sandy GRAVEL with debris (FILL) (see note below).
S-2	3 to 6	5		
S-3	8 to 10	5	8 to 10	(Medium dense), moist, medium brown, sandy GRAVEL (NATIVE).

Bottom of 12-6-TP-502 at 10 feet, completed 4/17/92.

Note:

Debris observed from depth of 3 to 8 feet: 1-inch-diameter plastic apparently empty white tubing, 1 car radio, assorted plastic debris, scattered bottles, jars and cans, and ceramics.

Log of Test Pit 12-7-TP-501

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.2	(Medium dense), moist, dark brown, silty, sandy GRAVEL.
S-2	3 to 6	5	1.2 to 10	(Loose), moist, brown, slightly sandy GRAVEL with gravel layers.
S-3	8 to 10	5		

Bottom of 12-7-TP-501 at 10 feet, completed 4/17/92.

Log of Test Pit 12-TP-501

Ground Surface Elevation Approximately 213.4 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 5.5	(Medium dense), moist to wet, black, slightly silty, very sandy GRAVEL with debris (FILL) (see Note 1 below). Zones of saturation (standing water) within fill below depth of 4.5 feet. Hydrogen sulfide odor associated with saturated zones.
S-2	3 to 4.5	4		
			5.5 to 9	(Dense), moist, dark brown, gravelly silty SAND (appears NATIVE). Soils more consolidated between 6 and 7 feet.
S-3	9 to 10	5	9 to 10	

Bottom of 12-TP-501 at 10 feet, completed 4/16/92.

Note:

Debris observed from depth of 0.5 to 6 feet: timbers, logs, plywood, and rolls of red paper (approximately 2 inches wide); pieces of styrofoam, cardboard, and plastic banding; scraps of cotton-like cloth with yellow powder-like substance (pH of 0 on pH paper).

Log of Test Pit 12-TP-502

Ground Surface Elevation Approximately 217.6 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 2	(Medium dense), moist, black, slightly silty, very sandy GRAVEL with roots from 0 to 1 foot.
S-2	3 to 6	4	2 to 10	(Medium dense), moist, tan-brown, sandy GRAVEL with interbedded layers of gray, sandy gravel.
S-3	8 to 10	4		

Bottom of 12-TP-502 at 10 feet, completed 4/16/92.

Log of Test Pit 12-TP-503

Ground Surface Elevation Approximately 217.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Medium dense), moist, black, slightly silty, very sandy GRAVEL.
S-2	3 to 6	4.5	2 to 4	(Medium dense), moist, tan-brown, sandy GRAVEL.
S-3	4 to 10	4.5	4 to 10	(Medium dense), moist, medium gray, sandy GRAVEL with interbedded gravel layers.

Bottom of 12-TP-503 at 10 feet, completed 4/16/92.

Log of Test Pit 12-TP-504

Ground Surface Elevation Approximately 225.3 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.3	(Medium dense), moist, dark brown, silty, sandy GRAVEL.
S-2	3 to 6	5	1.3 to 7	(Loose), moist, brown GRAVEL.
S-3	8 to 10	5	7 to 10	(Medium dense), moist, light brown, sandy GRAVEL.

Bottom of 12-TP-504 at 10 feet, completed 4/17/92.

Log of Test Pit 12-TP-505

Ground Surface Elevation Approximately 222.1 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 6	(Medium dense), moist, dark brown, silty, sandy GRAVEL with abundant debris (FILL) (see note below).
S-2	3 to 6	5		
S-3	8 to 10	5	6 to 10	(Dense), moist, brown, sandy GRAVEL (NATIVE).

Bottom of 12-TP-505 at 10 feet, completed 4/17/92.

Note:

Debris observed from depth of 1.5 to 6 feet: abundant water gel bags, minor amounts of plastic banding, metal banding (strapping), 1-inch-diameter plastic pipe, plastic drum liners, and cardboard. Did not observe any residual water gel.

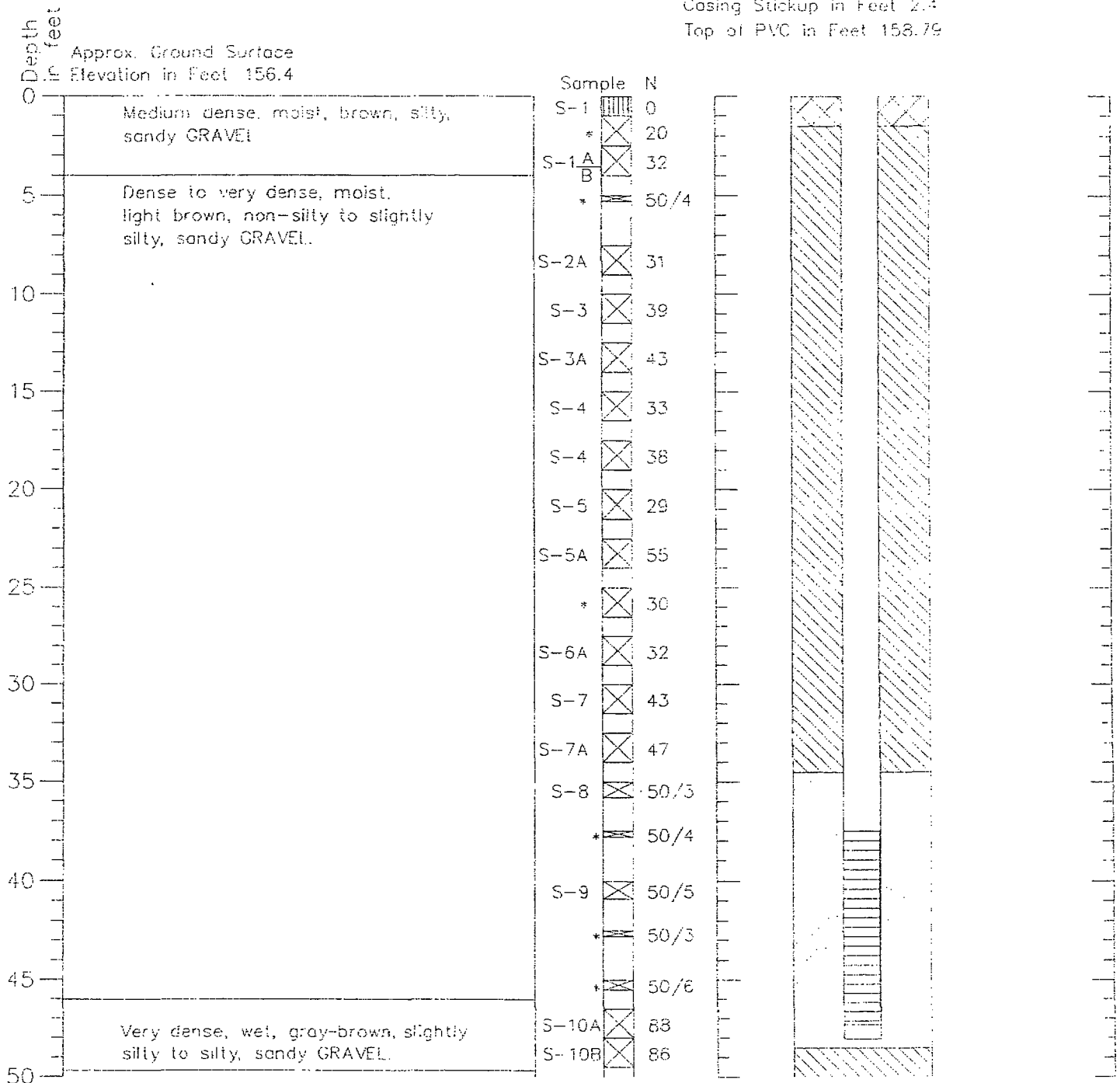
AREA 16
EXPLORATION LOGS

Boring Log and Construction Data for Monitoring Well 16-B-501

Geologic Log

Monitoring Well Design

Casing Stickup in Feet 2.4
Top of PVC in Feet 158.79



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

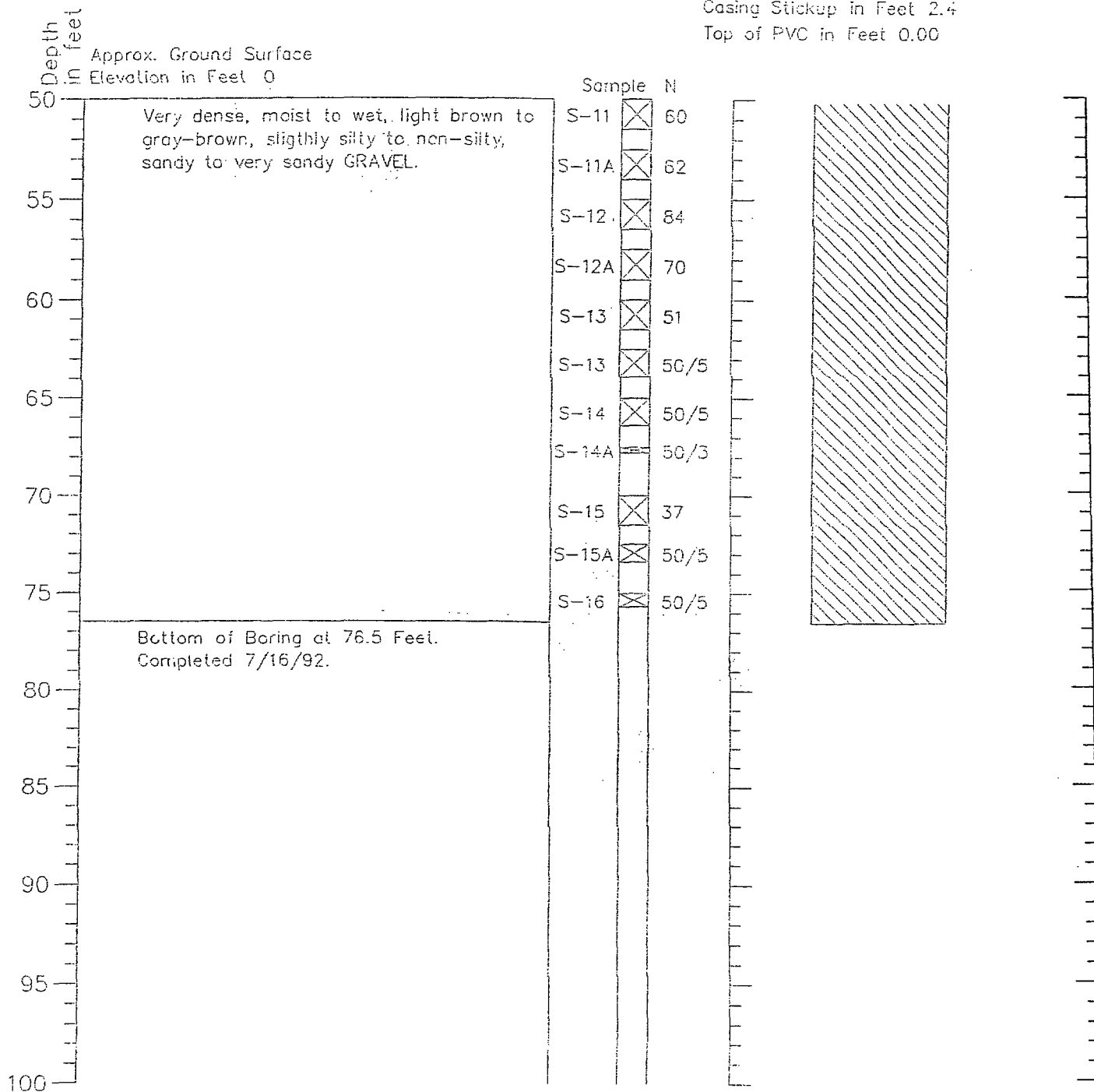
Figure A-16-1

Boring Log and Construction Data for Monitoring Well 16-B-501

Geologic Log

Monitoring Well Design

Casing Stickup in Feet 2.4
Top of PVC in Feet 0.00



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Boring Log 16-B-502

Soil Descriptions

Ground Surface Elevation in Feet 144.8

(Loose), moist, light brown, gravelly, fine to medium SAND.	0
Medium dense, wet, brown, very gravelly, medium to coarse SAND.	5
Dense, wet, brown, sandy GRAVEL.	10
Bottom of Boring at 11.5 Feet. Completed 2/24/92	11.5

Depth in Feet

0

5

10

15

20

25

30

35

40

45

50

55

60

STANDARD PENETRATION RESISTANCE

Δ Blows per Foot

Sample

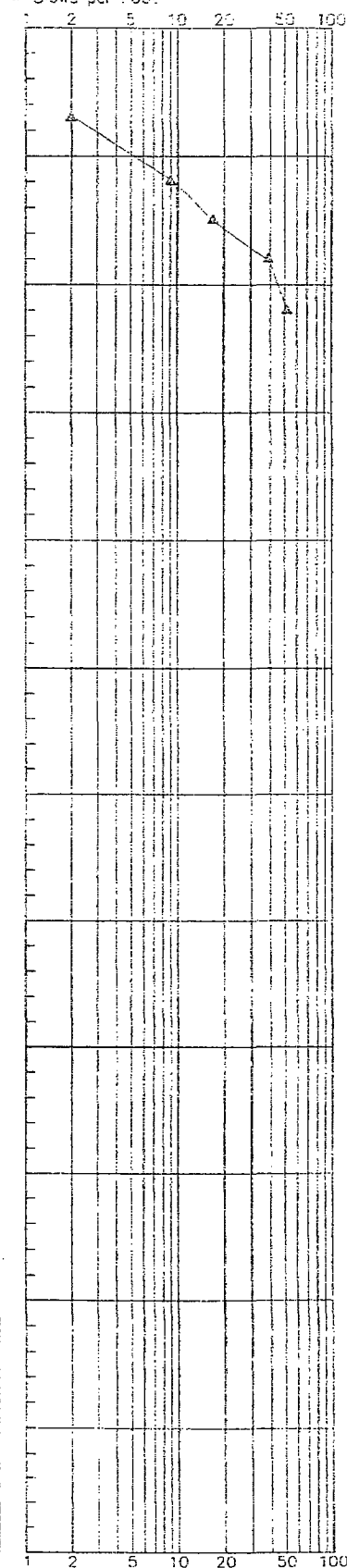
S-1(R)

*S-1A

S-2

S-2A

*S-3



CH

5

NM

5

NM

NM

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (AID) or for date specified. Level may vary with time.

NO. 100 10-5-603

Soil Descriptions

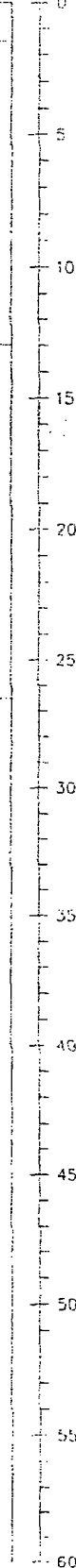
Ground Surface Elevation in Feet 143.0

Flowey, moist, light brown, gravelly, fine to medium SAND.
Medium dense, moist, brown and black, sandy GRAVEL.

Very dense, moist to wet, brown and reddish-brown, slightly silty to non-silty, slightly sandy GRAVEL.

Bottom of Boring at 26.5 Feet.
Completed 2/24/92

Depth
in Feet

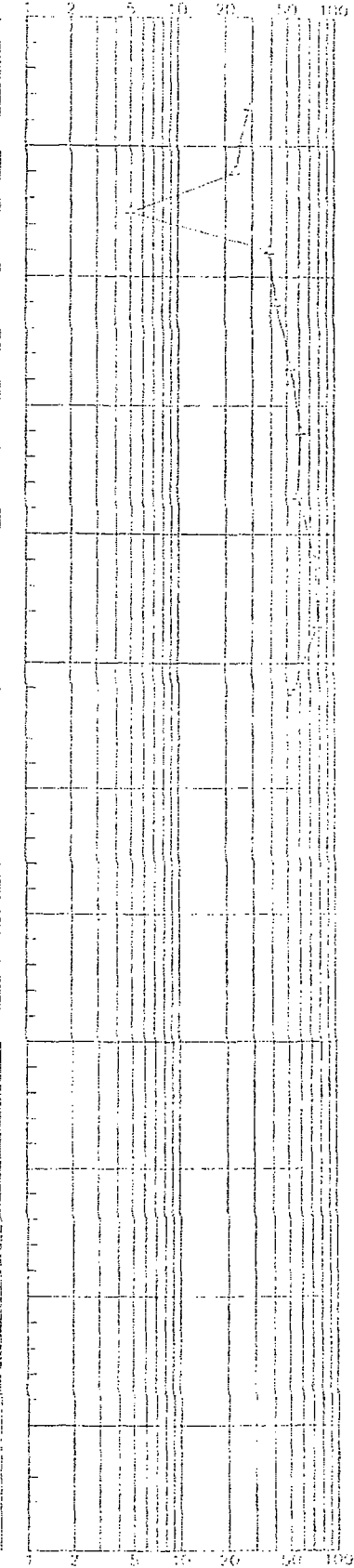


STANDARD PENETRATION RESISTANCE

Sample

S-1A
S-1A
S-2
S-2A
S-3
S-4
S-5
S-6
S-7
S-8
S-9

Blows per Foot



pH

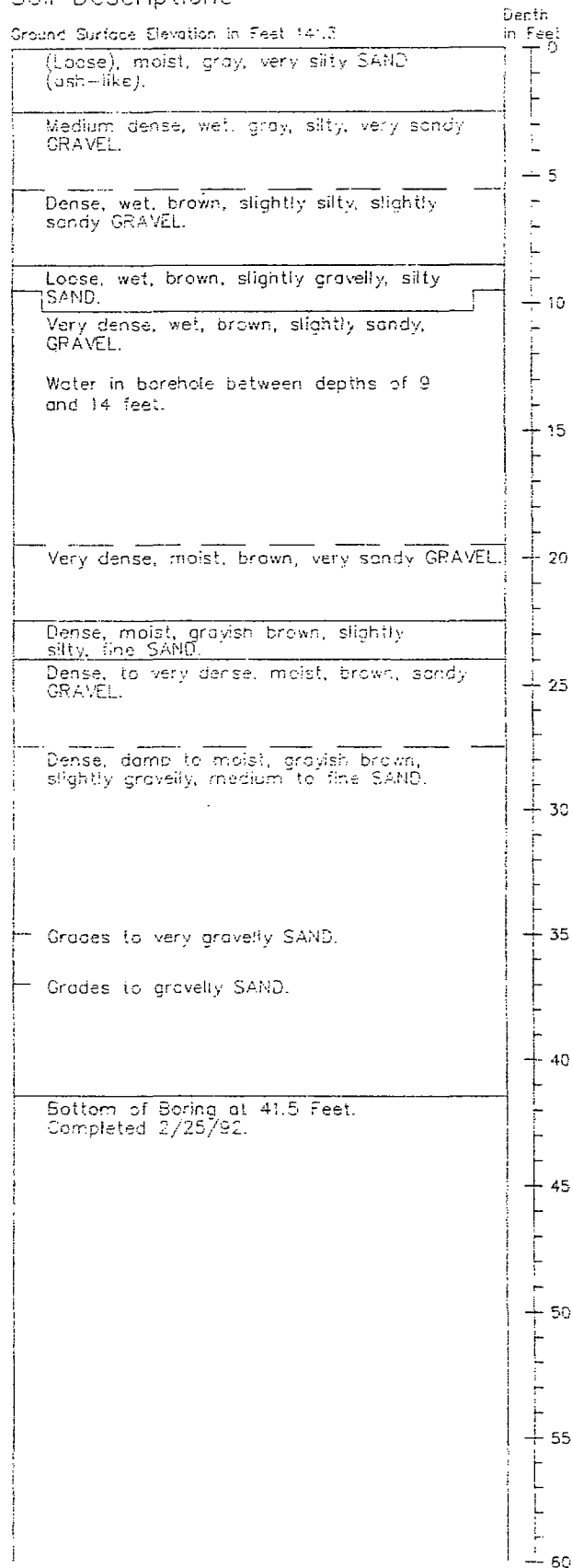
5
5
5
5
5
5
5
5
5
5
5

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATG) or for date specified. Level may vary with time.

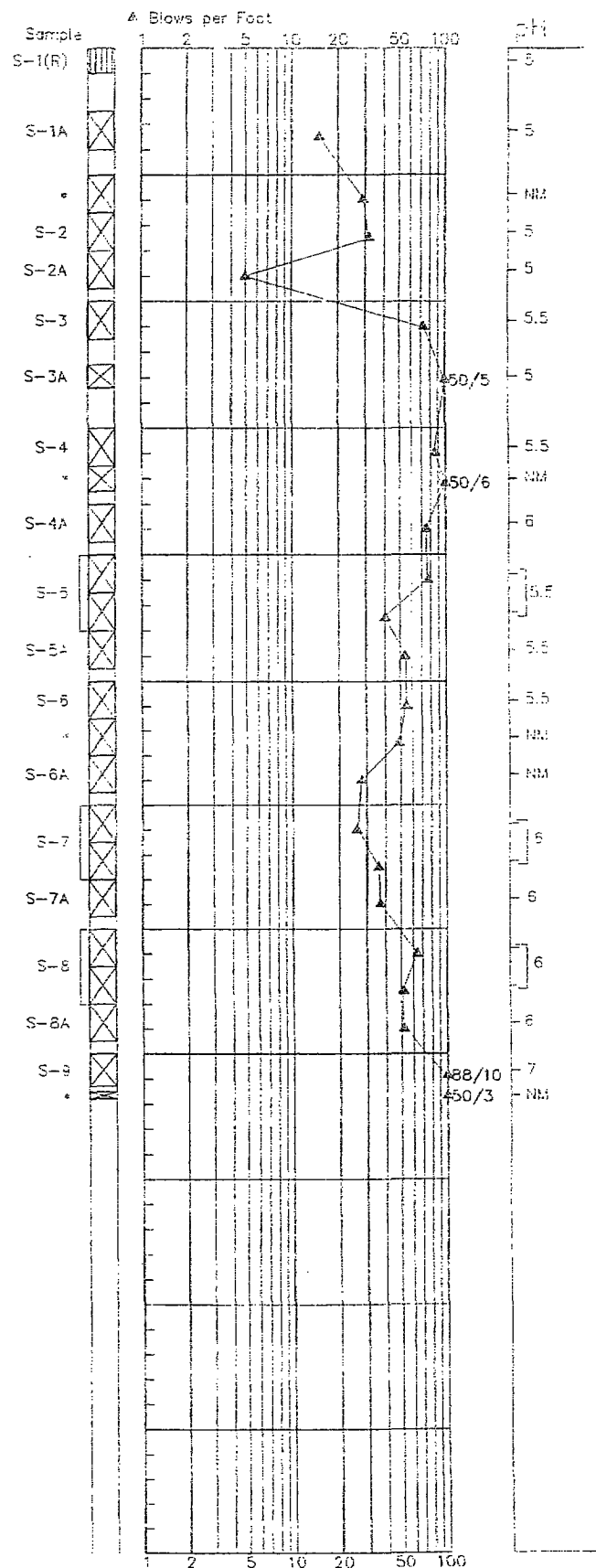
Boring Log 16-B-504

Soil Descriptions

Ground Surface Elevation in Feet 141.3



STANDARD PENETRATION RESISTANCE



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Boring Log 16-B-505

Soil Descriptions

Ground Surface Elevation in Feet 142.6

Loose, moist, light brown, slightly silty SAND.
Medium stiff, moist, light brown, gravelly, sandy SILT.
Medium dense, moist, light brown, silty sandy GRAVEL and gravelly, very silty SAND.

Very dense, moist, light to gray-brown, slightly silty to silty, sandy GRAVEL.

Bottom of Boring at 28.5 Feet
Completed 7/14/92

Depth
in Feet

0
5
10
15
20
25
30
35
40
45
50
55
60

STANDARD PENETRATION RESISTANCE

LAB TESTS

Blows per Foot

Sample 1 2 5 10 20 50 100

S-1
S-2
S-1C
S-2
S-2S
S-3
S-3A
S-4S
S-5
S-5A
S-6

50/5
50/5
50/5
50/3

Water Content in Percent

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (AB) or for date specified. Level may vary with time.

Log of Test Pit 16-TP-501

Ground Surface Elevation Approximately 145.8 Feet

Sample Number	Sample Depth in Feet	pH/PID	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5/0	0 to 2.5	Four inches of moist, black, silty, gravelly SAND with abundant roots over (medium dense), moist, tan and brown, very sandy GRAVEL.
S-2	3 to 6.5	5/0	2.5 to 6	(Medium dense), moist, grayish brown, very sandy to sandy GRAVEL.
			6 to 8	(Medium stiff), moist, gray and brown, sandy SILT.
S-3	8 to 10	5/0	8 to 10	(Medium dense), moist to wet, gray, sandy GRAVEL.

Bottom of 16-TP-501 at 10 feet, completed 3/10/92.

Log of Test Pit 16-TP-502

Ground Surface Elevation Approximately 143.8 Feet

Sample Number	Sample Depth in Feet	pH/PID	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5/0	0 to 3	Four inches of organic debris over (medium dense), sandy GRAVEL with abundant roots.
S-2	3 to 6	5/0	3 to 8	(Medium dense), moist, brownish gray, sandy GRAVEL with layer of brick-red soil between depths of 7 and 8 feet.
S-3	7.5 to 10	4/0	8 to 10	(Medium dense), moist, brownish gray, very gravelly, medium SAND with zone of brick-red soil between depths of 8.5 and 9.5 feet.

Bottom of 16-TP-502 at 10 feet, completed 3/10/92.

Log of Test Pit 16-TP-503

Ground Surface Elevation Approximately 144.7 Feet

Sample Number	Sample Depth in Feet	pH/PID	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5/0	0 to 0.5	Two inches of hard, residual Bunker C over 2 inches of black, silty SAND with roots over (medium dense), moist, brown, sandy GRAVEL with 1-inch-thick lens of black, very silty SAND at a depth of 0.5 foot.
S-2	3 to 6	5/0	0.5 to 3.5	(Medium dense), moist, brown, sandy GRAVEL.
S-3	8 to 10	5/0	3.5 to 10	(Medium dense), moist, gray, sandy GRAVEL.

Bottom of 16-TP-503 at 10 feet, completed 3/10/92.

Log of Test Pit 16-TP-504

Ground Surface Elevation Approximately 145.5 Feet

Sample Number	Sample Depth in Feet	pH/PID	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	4/0	0 to 2.5	Four inches of black, silty SAND with abundant roots over (medium dense), moist, brown, slightly gravelly, silty SAND.
S-2	3 to 6	4/0	2.5 to 7	(Medium dense), moist, gray, very silty, fine to medium SAND with 6-inch-thick non-silty sand lens at a depth of 3.5 feet.
S-3	8 to 10	4.5/0	7 to 10	(Medium dense), moist, brownish gray, sandy GRAVEL.

Bottom of 16-TP-504 at 10 feet, completed 3/10/92.

Log of Test Pit 16-TP-505

Ground Surface Elevation Approximately 142.6 Feet

Sample Number	Sample Depth in Feet	pH/PID	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1.5	3.5/0	0 to 1.25	Four inches of grass over (soft), moist, brown and red, non-sandy to slightly sandy SILT with abundant organic matter.
			1.25 to 2.5	(Loose), moist, gray, slightly gravelly, silty SAND.
S-2	3 to 6	4.5/0	2.5 to 4	(Soft), moist, grayish orange, sandy SILT with minor wood fragments.
S-3	8 to 10	4.5/0	4 to 10	(Medium dense), moist, grayish orange, silty to slightly silty, sandy GRAVEL.

Bottom of 16-TP-505 at 10 feet, completed 3/11/92.

Log of Test Pit 16-TP-506

Ground Surface Elevation Approximately 147.8 Feet

Sample Number	Stratum Depth in Feet	Soil Description
No Samples Collected	0 to 0.5	Three inches of grass over (soft), moist, dark brown, slightly sandy SILT with abundant organics and drum fragments.

Bottom of 16-TP-506 at 0.5 feet, completed 3/11/92.

Note: 16-TP-506 abandoned due to presence of drum fragments in upper ½ foot. Replaced with 16-TP-509.

Log of Test Pit 16-TP-507

Ground Surface Elevation Approximately 141.0 Feet

Sample Number	Sample Depth in Feet	pH/PID	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	4/0	0 to 1	(Soft), moist, red, laminated SILT.
S-2	3 to 6	4/0	1 to 4	(Loose), moist, light grayish orange, silty, fine to medium SAND with wood fragments.
S-3	8 to 10	4/0	4 to 10	Medium dense, moist, brownish orange, slightly silty, sandy GRAVEL.

Bottom of 16-TP-507 at 10 feet, completed 3/11/92.

Log of Test Pit 16-TP-508

Ground Surface Elevation Approximately 147.1 Feet

Sample Number	Sample Depth in Feet	pH/PID	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5/0	0 to 1.5	(Medium dense), damp, gray and dark brown, slightly silty, sandy GRAVEL with interbedded 1- to 2-inch-thick dark brown silty lenses and abundant roots and other organic matter.
S-2	3 to 6	5/0	1.5 to 9	(Medium dense), damp, reddish brown to brownish orange, sandy GRAVEL.
S-3	8 to 10	5/0	9 to 10	(Medium dense), moist, light brownish orange, fine to medium SAND.

Bottom of 16-TP-508 at 10 feet, completed 3/11/92.

Log of Test Pit 16-TP-509

Ground Surface Elevation Approximately 145.1 Feet

Sample Number	Sample Depth in Feet	pH/PID	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5/0	0 to 2.75	Two inches of hard, residual Bunker C over (medium dense), damp, gray, slightly silty, sandy GRAVEL with abundant roots and wood fragments.
			2.75 to 4.5	(Loose), damp to moist, dark gray, silty SAND with minor organic matter.
S-2	3 to 6	5/0	4.5 to 5	(Medium dense), moist, light brownish orange, slightly silty, fine SAND.
S-3	8 to 10	5/0	5 to 10	(Medium dense), moist, light brownish orange, slightly silty, sandy GRAVEL.

Bottom of 16-TP-509 at 10 feet, completed 3/11/92.

AREA 18
EXPLORATION LOGS

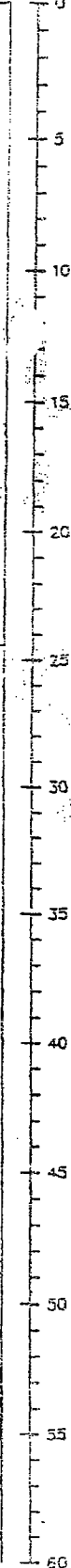
Boring Log 18-B-502

Soil Descriptions

Medium dense to very dense, moist, dark brown to light brown, slightly silty, sandy GRAVEL.

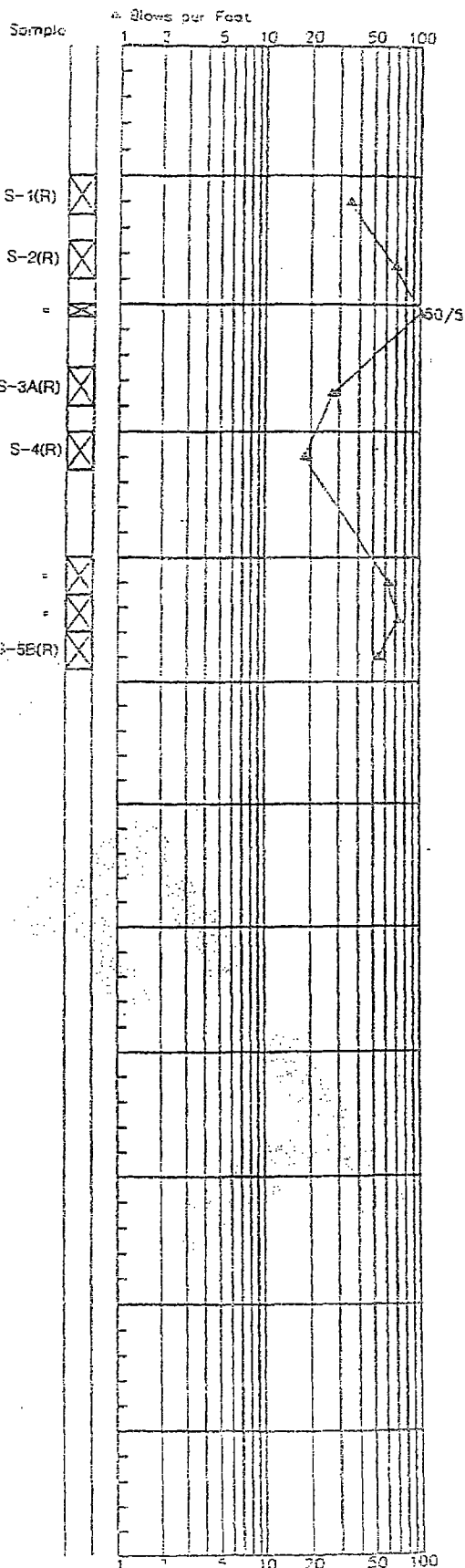
Bottom of Boring at 24.5 Feet.
Completed 11/5/92

Depth
in Feet



STANDARD PENETRATION RESISTANCE

LAB TESTS



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Boring Log 18-B-501

Soil Descriptions

Medium dense, moist, light brown, silty to slightly silty GRAVEL.

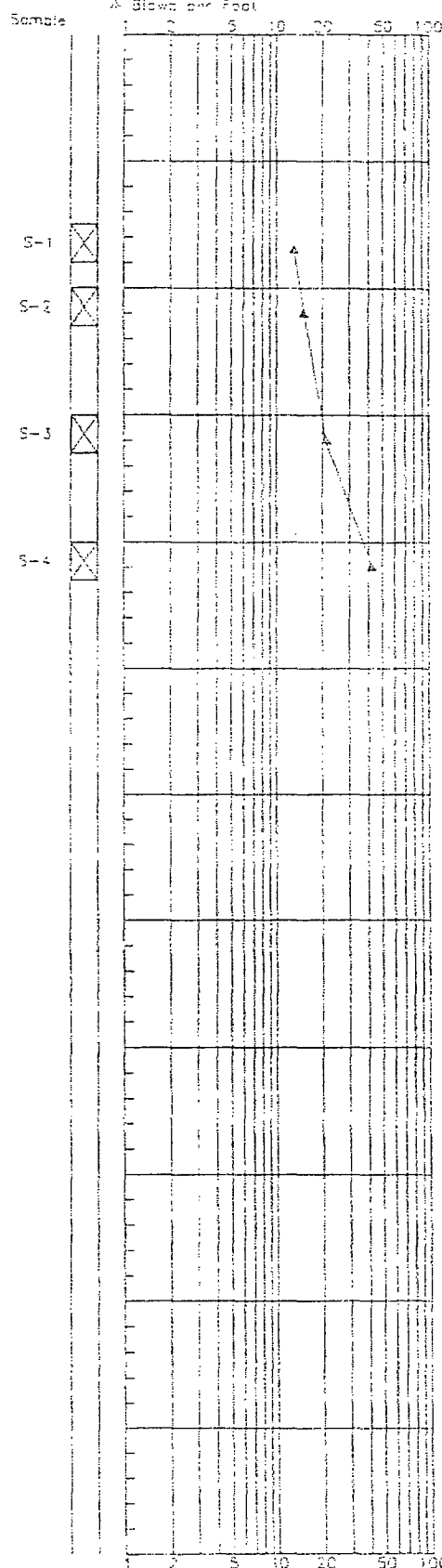
Bottom of Boring at 55 Feet.
Completed 11/5/92

Depth
in Feet

0
5
10
15
20
25
30
35
40
45
50
55
60

STANDARD PENETRATION RESISTANCE

LAB
TESTS



1. Refer to Figure A-1 for explanation of description and symbols.
2. Soil descriptions and stratum lines are interpreted and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Log of Test Pit 18-TP-501

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2.5	(Loose), damp, brown, sandy GRAVEL with scattered concrete pieces.
S-1A	2.5 to 3	5	2.5 to 3	(Loose), moist, dark brown, gravelly SAND.
S-2	3 to 6	5	3 to 9	(Medium dense), moist, brown, sandy GRAVEL.
S-3	8 to 10	5	9 to 10	(Very dense), moist, brown, sandy GRAVEL.

Bottom of 18-TP-501 at 10 feet, completed 5/11/92.

Log of Test Pit 18-TP-502

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 4	(Loose), moist, medium to dark brown, slightly gravelly, silty SAND.
S-2	4 to 6	4	4 to 6	(Loose), moist, light brown, very gravelly SAND.
S-3	8 to 10	4.5	6 to 10	(Loose), moist, medium gray, very gravelly SAND with gravel layers.

Bottom of 18-TP-502 at 10 feet, completed 5/1/92.

Note:

Sample S-1 is a 5-point composite of 0 to 1 foot within the foundation of Nitrator 1.

Log of Test Pit 18-TP-503

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 0.5	(Loose), moist, medium brown, slightly silty, sandy GRAVEL.
S-2	3 to 6	4.5	0.5 to 1	(Medium dense), moist, interbedded tan-brown and gray, sandy GRAVEL with a gray sand layer from depth of 3 to 3.5 feet and gravel layers.
S-3	8 to 10	5		

Bottom of 18-TP-503 at 10 feet, completed 5/1/92.

Note:

Sample S-1 is a 5-point composite from 0 to 1 foot within the foundation of Separator No. 1.

Log of Test Pit 18-TP-504

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 4	(Loose), damp, brown, sandy GRAVEL (FILL) with chunks of concrete.
S-2	3 to 6	5	4 to 10	(Medium dense), moist, brown, sandy GRAVEL (NATIVE).
S-3	8 to 10	5		

Bottom of 18-TP-504 at 10 feet, completed 5/1/92.

Note:

Sample S-1 is a 5-point composite from 0 to 1 foot in Neutralizing House No. 3 foundation.

Log of Test Pit 18-TP-505

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Loose), moist, dark brown, very gravelly SAND with concrete and scattered wood (FILL).
S-2	3 to 6	5	1 to 10	(Very dense), moist, brown, slightly sandy to sandy GRAVEL (NATIVE) with gravel layers dipping west.
S-3	8 to 10	5		

Bottom of 18-TP-505 at 10 feet, completed 5/11/92.

Note:

Sample S-1 is a 5-point composite in Neutralizer No. 2 foundation.

Log of Test Pit 18-TP-506

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.5	Four inches of forest duff over (loose), moist, dark brown, very gravelly SAND with minor organics.
			1.5 to 3	(Dense), moist, gray and brown, sandy GRAVEL.
S-2	3 to 6	5	3 to 5	(Dense), moist, brown, sandy GRAVEL with minor silt which decreases with depth.
S-3	8 to 10	5	5 to 10	(Very dense), moist, brown, sandy to slightly sandy GRAVEL.

Bottom of 18-TP-506 at 10 feet, completed 5/12/92.

Note:

Native soils encountered at depth of 2.5 to 3 feet.

Log of Test Pit 18-TP-507

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 1.5	Three inches of forest duff over (loose), moist, dark brown, gravelly SAND with minor organics.
S-2	3 to 6	1.5 to 10	(Dense), moist, brown, gravelly SAND with interbedded gravel layers dipping to west.
S-3	8 to 10		

Bottom of 18-TP-507 at 10 feet, completed 5/12/92.

Log of Test Pit 18-TP-508

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 1.5	(Loose), moist, dark brown, gravelly SAND (Disturbed soils).
		1.5 to 2	(Medium dense), moist, rusty brown, sandy GRAVEL (weathered zone, appears NATIVE).
S-2	3 to 6	2 to 10	(Dense), moist, brown, gravelly SAND with interbedded sandy gravel layers dipping to the west.
S-3	8 to 10		

Bottom of 18-TP-508 at 10 feet, completed 5/12/92.

Note:

Approximately 6 to 8 inches of soil removed during demolition and prior to excavation.

Log of Test Pit 18-TP-509

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Loose), moist, dark brown, gravelly SAND with minor organics.
			1 to 1.5	(Medium dense), moist, rusty brown, sandy GRAVEL (NATIVE).
S-2	3 to 6	5	1.5 to 10	(Dense), moist, brown, gravelly SAND with interbedded sandy gravel layers dipping toward SW (NATIVE).
S-3	8 to 10	5		

Bottom of 18-TP-509 at 10 feet, completed 5/12/92.

Log of Test Pit 18-TP-510

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 2	(Loose), moist, dark brown, very gravelly SAND with minor organics.
S-2	3 to 6	5	2 to 3.5	(Medium dense), moist, rusty brown, sandy GRAVEL.
S-3	8 to 10	5	3.5 to 10	(Medium dense), moist, brown, sandy GRAVEL with interbedded gravel layers.

Bottom of 18-TP-510 at 10 feet, completed 5/14/92.

Log of Test Pit 18-TP-511

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 1.5	(Loose), moist, dark brown, gravelly SAND with minor organics.
S-2(R)	3 to 6	5	1.5 to 10	(Medium dense), moist, brown, sandy GRAVEL with interbedded gravel layers.
S-3(R)	8 to 10	5		

Bottom of 18-TP-511 at 10 feet, completed 5/14/92.

Log of Test Pit 18-TP-512

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Loose), moist, dark brown, very gravelly SAND with minor roots.
S-2	3 to 6	5	1 to 10	(Medium dense), moist, brown, sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 18-TP-512 at 10 feet, completed 5/14/92.

Log of Test Pit 18-TP-513

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2.5	(Loose), moist, dark brown, gravelly SAND with minor organics.
S-2	3 to 6	5	2.5 to 10	(Medium dense), moist, brown, sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 18-TP-513 at 10 feet, completed 5/14/92.

Log of Test Pit 18-TP-514

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 4	(Loose), moist, dark brown, gravelly SAND with small pieces of concrete, rebar, and steel debris (Disturbed soils).
S-2	4 to 6	5	4 to 10	(Dense), moist, brown, slightly sandy GRAVEL with bedding dipping southwest (NATIVE).
S-3	8 to 10	5		

Bottom of 18-TP-514 at 10 feet, completed 5/11/92.

Notes:

- 1) Sample S-1 is a 5-point composite from 0 to 1 foot in area of former Dynamite Mix House No. 2 structure.
- 2) Soil and debris from 0 to 4 feet appear to have been recently mixed from debris removal and sympathetic detonation.

Log of Test Pit 18-TP-515

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 2	(Loose), moist, dark brown, very gravelly SAND with scattered organics.
			2 to 3	(Medium dense), moist, tan, sandy GRAVEL.
S-2	3 to 6	5	3 to 10	(Medium dense), moist, brown, sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 18-TP-515 at 10 feet, completed 5/14/92.

Log of Test Pit 18-TP-516

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.5	(Loose), moist, dark brown, gravelly SAND with minor organics.
			1.5 to 2.5	(Medium dense), moist, tan, sandy GRAVEL with occasional roots.
S-2	3 to 6	5	2.5 to 10	(Medium dense), moist, brown, sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 18-TP-516 at 10 feet, completed 5/14/92.

Log of Test Pit 18-TP-517

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 0.8	5	0 to 3	(Loose), moist, brown, gravelly SAND with thin layer of black material at depth of 1 foot (Sample S-1A).
S-1A	0.8 to 1	NM		
S-2	3 to 6	5	3 to 10	(Medium dense), moist, brown, gravelly SAND with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 18-TP-517 at 10 feet, completed 5/14/92.

Log of Test Pit 18-TP-518

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2.5	(Loose), moist, dark brown, sandy GRAVEL with abundant roots.
S-2	3 to 6	5	2.5 to 10	(Medium dense), moist, brown, sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 18-TP-518 at 10 feet, completed 5/14/92.

Log of Test Pit 18-TP-519

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2.5	(Loose), moist, dark brown, gravelly SAND with minor organics and concrete debris.
S-2	3 to 6	5	2.5 to 10	(Dense), moist, brown, sandy GRAVEL with bedded gravel layers dipping southwest (NATIVE).
S-3	8 to 10	5		

Bottom of 18-TP-519 at 10 feet, completed 5/11/92.

Note:

Sample S-1 was a 4-point composite around debris (concrete, rebar) in center of Gelatin Mix House No. 3 foundation.

Log of Test Pit 18-TP-520

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.5	(Loose), damp, brown, slightly gravelly, silty SAND with a small lens of black burnt wood from 1.3 to 1.5 feet, and bricks with pier block.
S-2	3 to 6	5	1.5 to 10	(Loose), damp, light brown, slightly sandy GRAVEL with gravel layers.
S-3	8 to 10	5		

Bottom of 18-TP-520 at 10 feet, completed 4/27/92.

Log of Test Pit 18-TP-521

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 10	(Loose), damp, brown, sandy GRAVEL with interbedded gravel layers.
S-2(R)	3 to 6	5		
S-3	8 to 10	5		

Bottom of 18-TP-521 at 10 feet, completed 5/12/92.

Note:

Sample S-1 is a 5-point composite from 0 to 1 foot in former Gelatin Mix House No. 1 foundation.

Log of Test Pit 18-TP-522

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 1	(Loose), damp, light brown, silty, gravelly SAND.
			1 to 2.5	(Loose), damp, dark brown, silty, gravelly SAND.
S-2(R)	3 to 6	5	2.5 to 10	(Loose), damp, brown, sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 18-TP-522 at 10 feet, completed 5/13/92.

Log of Test Pit 18-TP-523

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 8	(Medium dense), damp, medium and dark brown, silty, gravelly SAND with scattered pieces of burnt wood from 1 to 4 feet.
S-2	3 to 6	5		
S-3	8 to 10	5	8 to 10	(Medium dense), damp, light brown, sandy GRAVEL.

Bottom of 18-TP-523 at 10 feet, completed 5/13/92.

Log of Test Pit 18-TP-524

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Loose), moist, dark brown, very gravelly SAND with roots.
S-2	3 to 6	5	1 to 10	(Medium dense), moist, brown, sandy GRAVEL with interbedded gravel layers (NATIVE).
S-3	8 to 10	5		

Bottom of 18-TP-524 at 10 feet, completed 5/12/92.

Log of Test Pit 18-TP-525

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 2	(Loose), moist, dark brown, gravelly SAND with roots and other organics.
			2 to 3.5	(Medium dense), moist, reddish brown, sandy GRAVEL with roots.
S-2	3 to 6	5	3 to 10	(Medium dense), moist, brown, sandy GRAVEL with gravel layers (NATIVE).
S-3	8 to 10	5		

Bottom of 18-TP-525 at 10 feet, completed 5/12/92.

Log of Test Pit 18-TP-526

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 3	(Loose), damp, dark brown, silty, sandy GRAVEL (see notes below).
S-2	3 to 6	4.5	3 to 10	(Medium dense), damp, light brown, sandy GRAVEL.
S-3	8 to 10	4.5		

Bottom of 18-TP-526 at 10 feet, completed 4/30/92.

Notes:

- 1) Sample S-1 is a five-point composite of soil from 0 to 1 foot in Gelatin Mix House No. 2 foundation. Soil had been disturbed by heavy equipment prior to sampling.
- 2) Observed a piece of wood from 0.5 to 1 foot in depth that appeared to be an old gutter or pipe.

Log of Test Pit 18-TP-527

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Loose), damp, dark brown, silty, gravelly SAND.
S-2	3 to 6	5	2 to 10	(Medium dense), damp, light brown, slightly sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 18-TP-527 at 10 feet, completed 5/13/92.

Note:

Surface disturbed by heavy equipment prior to excavation.

Log of Test Pit 18-TP-528

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 6	(Loose), damp, dark brown, silty, gravelly SAND (FILL?).
S-2	3 to 6	5		
S-3	8 to 10	5	6 to 10	(Medium dense), damp, light brown, sandy GRAVEL.

Bottom of 18-TP-528 at 10 feet, completed 5/13/92.

Log of Test Pit 18-TP-529

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 3	(Loose), damp, dark brown, silty, gravelly SAND.
S-2	3 to 6	5	3 to 10	(Medium dense), damp, brown, sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 18-TP-529 at 10 feet, completed 5/13/92.

Log of Test Pit 18-TP-530

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2.5	(Loose), damp, black, silty, gravelly SAND with large roots.
S-2	3 to 6	5	2.5 to 10	(Medium dense), damp, light brown, sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 18-TP-530 at 10 feet, completed 5/13/92.

Log of Test Pit 18-TP-531

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 2.5	(Loose), damp, brown, silty, gravelly SAND with organics.
S-2	3 to 6	2.5 to 10	(Dense), damp, brown, sandy GRAVEL.
S-3	8 to 10		

Bottom of 18-TP-531 at 10 feet, completed 5/15/92.

Log of Test Pit 18-TP-532

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 6	(Loose), damp, dark brown, silty, gravelly SAND (FILL)
S-2	3 to 6	4.5		
S-3	8 to 10	4.5	6 to 10	(Medium dense), damp, light brown, sandy GRAVEL (NATIVE).

Bottom of 18-TP-532 at 10 feet, completed 4/29/92.

Note:

Test pit excavated between 3 stem walls at Hall Packing House No. 4 foundation.

Log of Test Pit 18-TP-533

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 2	(Loose), damp, brown, slightly gravelly, silty SAND.
S-2	2 to 3	5.0	2 to 3	(Dense), damp, gray, slightly gravelly, sandy SILT.
S-3	3 to 6	5	3 to 7.5	(Dense), damp, brown, silty, gravelly SAND with a thin layer of burnt wood (charcoal) at depth of 5 feet.
S-4	8 to 10	5	7.5 to 10	(Medium dense), damp, light brown, sandy GRAVEL.

Bottom of 18-TP-533 at 10 feet, completed 4/28/92.

Log of Test Pit 18-TP-534

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 3	(Loose), damp, dark and light brown, silty, gravelly SAND mixed with debris (FILL) (see note below).
S-2	3 to 6	4.5	3 to 10	(Loose), damp, light brown, sandy GRAVEL with gravel bedding (appears NATIVE).
S-3	8 to 10	4.5		

Bottom of 18-TP-534 at 10 feet, completed 4/30/92.

Note:

Debris observed from depth of 0 to 3 feet: wood debris, bricks, copper lines and potential asbestos-containing material (ACM). TLH Abatement Inc. removed potential ACM from excavation.

Log of Test Pit 18-TP-535

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.5	(Loose), damp, light brown, sandy GRAVEL with bricks, metal fragments, and potential asbestos-containing material.
S-2	3 to 6	5	1.5 to 10	(Medium dense), damp, brown, sandy GRAVEL.
S-3	8 to 10	5		

Bottom of 18-TP-535 at 10 feet, completed 4/27/92.

Note:

TLW Abatement Inc. removed potential asbestos-containing material from excavation.

Log of Test Pit 18-TP-536

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 3	(Medium dense), damp, reddish brown, slightly gravelly, silty SAND with scattered charcoal and bricks.
S-2	3 to 6	5	3 to 10	(Dense), moist, light brown, slightly sandy GRAVEL.
S-3	8 to 10	5		

Bottom of 18-TP-536 at 10 feet, completed 4/27/92.

Log of Test Pit 18-TP-537

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Medium dense), damp, dark brown, silty, gravelly SAND.
S-2	3 to 6	5.5	2 to 8.5	(Loose), damp, light brown-gray, sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	6	8.5 to 10	(Loose), damp, light brown-gray, gravelly SAND.

Bottom of 18-TP-537 at 10 feet, completed 4/24/92.

Log of Test Pit 18-TP-538

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5.5	0 to 0.5	(Medium dense), damp, brown, silty SAND with scattered bricks.
S-2	3 to 6	5.5	0.5 to 10	(Loose), damp, light brown-gray, slightly sandy GRAVEL and interbedded gravel layers.
S-3	8 to 10	5.5		

Bottom of 18-TP-538 at 10 feet, completed 4/24/92.

Note:

Brick pier pad observed at depth of 0 to 2.5 feet.

Log of Test Pit 18-TP-539

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
3-1	0 to 1	5	0 to 1	(Medium dense), damp, brown, silty, gravelly SAND with scattered bricks.
			1 to 3	(Loose), damp, light brown-gray, sandy GRAVEL.
3-2	3 to 6	5	3 to 6	(Medium dense), damp, dark brown, silty, gravelly SAND.
3-3	8 to 10	5	6 to 10	(Loose), damp, light brown-gray, sandy GRAVEL.

Bottom of 18-TP-539 at 10 feet, completed 4/24/92.

Log of Test Pit 18-TP-540

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
3-1	0 to 1	5	0 to 1	(Medium dense), damp, brown, silty, gravelly SAND with scattered bricks.
3-2	3 to 6	5	1 to 10	(Loose), damp, light brown-gray, slightly sandy GRAVEL with interbedded gravel layers.
3-3	8 to 10	5		

Bottom of 18-TP-540 at 10 feet, completed 4/24/92.

Note:

Brick pier pad observed from depth of 0 to 2.5 feet.

Log of Test Pit 18-TP-541

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	6	0 to 1.2	(Loose), damp, medium brown, silty, gravelly SAND with scattered bricks, organics, burnt wood, and metal debris.
S-2	3 to 6	5	1.2 to 10	(Medium dense), damp, light brown-gray, sandy GRAVEL with a discontinuous gravel lens from 6.5 to 9.5 feet.
S-3	8 to 10	5		

Bottom of 18-TP-541 at 10 feet, completed 4/24/92.

Log of Test Pit 18-TP-542

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 2	(Loose), damp, dark brown, silty, sandy GRAVEL with scattered nails, charcoal, and other metal debris.
S-2	3 to 6	4.5	2 to 10	(Loose), damp, light brown, slightly sandy GRAVEL with gravel layers.
S-3	8 to 10	4.5		

Bottom of 18-TP-542 at 10 feet, completed 4/28/92.

Note:

Charcoal and metal debris observed on surface.

Log of Test Pit 18-TP-543

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.5	(Loose), damp, medium brown, silty, gravelly SAND with scattered charcoal (to 0.7 foot) and nails.
S-2	3 to 6	5	1.5 to 10	(Loose), damp, light brown-gray, slightly sandy GRAVEL with interbedded gravel layers dipping west.
S-3	8 to 10	5		

Bottom of 18-TP-543 at 10 feet, completed 4/28/92.

Log of Test Pit 18-TP-544

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Loose), damp, brown, slightly gravelly SAND.
S-2	3 to 6	5	1 to 6	(Medium dense), damp, medium brown, silty, sandy GRAVEL with debris (see notes below).
S-3	8 to 10	5	6 to 10	(Medium dense), damp, light brown, sandy GRAVEL.

Bottom of 18-TP-544 at 10 feet, completed 5/15/92.

Note:

Debris observed from depth of 1 to 4 feet: 1-inch-diameter steel pipe, steel ducts approximately 3 feet in diameter (crushed), wood fragments, and crystals of copper salts.

Log of Test Pit 18-TP-545

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 3	Three inches of forest duff over (loose), damp, medium brown, slightly gravelly, silty SAND.
S-2	3 to 6	4.5	3 to 6	(Loose), damp, dark brown, silty, sandy GRAVEL (see notes below).
S-3	8 to 10	4.5	6 to 10	(Medium dense), damp, light brown, slightly sandy GRAVEL.

Bottom of 18-TP-545 at 10 feet, completed 4/29/92.

Notes:

- 1) Found wire wrapped around treated wood, which appears to be part of a former pipeline, from depth of 2.5 to 5 feet.
- 2) Test pit excavated between two concrete "stem walls". Observed a small void beneath east stem wall.

Log of Test Pit 18-TP-546

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Medium dense), damp, medium brown, silty, gravelly SAND with a railroad tie and 1-inch-diameter metal pipe line near surface.
S-2	3 to 6	5	2 to 10	(Medium dense), damp, light brown, slightly sandy GRAVEL with gravel layers.
S-3	8 to 10	5		

Bottom of 18-TP-546 at 10 feet, completed 4/28/92.

Log of Test Pit 18-TP-547

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 0.5	(Loose), moist, dark brown, slightly silty, sandy GRAVEL (see note below).
S-2	3 to 6	5	0.5 to 10	(Medium dense), moist, tan-brown, sandy GRAVEL increasing in moisture with depth.
S-3	8 to 10	5		

Bottom of 18-TP-547 at 10 feet, completed 5/1/92.

Note:

Sample S-1 is a 5-point composite from depth of 0 to 1 foot.

Log of Test Pit 18-TP-548

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2.5	(Loose), moist, dark brown, gravelly SAND with minor organics.
S-2	3 to 6	5	2.5 to 4	(Medium dense), moist, reddish brown, gravelly SAND.
S-3	8 to 10	5	4 to 10	(Medium dense), moist, brown, gravelly SAND with interbedded gravel layers.

Bottom of 18-TP-548 at 10 feet, completed 5/14/92.

Log of Test Pit 18-TP-549

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 1	(Medium dense), moist, dark brown, slightly silty, sandy GRAVEL.
S-2	3 to 6	5	1 to 10	(Medium dense), moist, tan-brown, sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 18-TP-549 at 10 feet, completed 5/1/92.

Note:

Sample S-1 is a 5-point composite from 0 to 1 foot within Dynamite Mix House No. 1 foundation.

Log of Test Pit 18-TP-550

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 2.5	(Loose), damp, intermixed brown SAND; dark brown, sandy GRAVEL; and black, gravelly SAND with debris (FILL) (see note below).
S-2	3 to 6	2.5 to 7	(Dense), damp, medium brown, sandy GRAVEL (NATIVE).
S-3	8 to 10	7 to 10	(Medium dense), moist, brown, sandy GRAVEL (NATIVE).

Bottom of 18-TP-550 at 10 feet, completed 5/15/92.

Note:

Debris observed from depth of 0.5 to 2.5 feet: 2 timbers, 1 steel pipe, and pieces of sheet metal.

Log of Test Pit 18-TP-551

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 1.5	(Loose), damp, brown, silty, gravelly SAND with piece of plastic at 0.5 foot.
S-2	3 to 6	1.5 to 10	(Medium dense), moist, brown, sandy GRAVEL with gravel layers.
S-3	8 to 10		

Bottom of 18-TP-551 at 10 feet, completed 5/15/92.

Log of Test Pit 18-TP-552

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 2	(Loose), damp, dark brown, silty, sandy GRAVEL with brick and mortar debris.
S-2	3 to 5	4.5	2 to 10	(Loose), damp, light brown, sandy GRAVEL with gravel layers.
S-3	8 to 10	4.5		

Bottom of 18-TP-552 at 10 feet, completed 4/29/92.

Log of Test Pit 18-TP-553

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 6	(Loose), damp, dark brown, silty, gravelly SAND with debris and strong creosote odor (see notes below).
S-2	3 to 6	4.5		

Bottom of 18-TP-553 at 6 feet, completed 4/29/92.

Notes:

- 1) Debris found from depth of 1 to 6 feet: crushed sections of sheet metal ducting which appeared to be approximately 3 feet in diameter, creosote-treated wood debris, and short lengths of iron.
- 2) Potential asbestos-containing material (ACM) encountered throughout excavation; TLH Abatement Inc removed potential ACM.

Log of Test Pit 18-TP-554

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 6	(Loose), damp, dark brown-black, silty, gravelly SAND with 1-inch diameter PVC waterline at 0.5 foot.
S-2	3 to 6	4.5		
			6 to 8	(Loose), damp, light brown, gravelly SAND.
S-3	8 to 10	5	8 to 10	(Medium dense), damp, light brown-gray, sandy GRAVEL.

Bottom of 18-TP-554 at 10 feet, completed 4/29/92

Log of Test Pit 18-TP-555

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 6.5	(Loose), damp, dark brown, silty, sandy GRAVEL mixed with debris (FILL) (see notes below).
S-2	3 to 6	5		
S-3	8 to 10	4.5	6.5 to 10	(Medium dense), moist, light-brown, sandy GRAVEL.

Bottom of 18-TP-555 at 10 feet, completed 4/30/92.

Note:

- 1) Debris mixed in with soils from 0 to 6.5 feet: moderate amount of bricks, mortar, creosote-treated wood, metal, and ash.
- 2) Observed thin layer of crystalline copper salts mixed with black SAND, in the side wall between depth of 3 and 4 feet.

Figure A-18-30

Log of Test Pit 18-TP-556

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 10	(Loose), damp, light brown, slightly sandy GRAVEL with interbedded gravel layers.
S-2	3 to 6	5		
S-3	8 to 10	5		

Bottom of 18-TP-556 at 10 feet, completed 5/13/92.

Note:

1 to 2 feet of soil removed during interim source removal prior to test pit excavation.

Log of Test Pit 18-TP-557

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 10	(Loose), damp, medium gray SAND with debris (FILL) (see note below).
S-2	3 to 6	4.5		
S-3	8 to 10	4.5		

Bottom of 18-TP-557 at 10 feet, completed 4/30/92.

Note:

Debris observed from depth of 0 to 10 feet: abundant chunks of wood debris (mostly creosote-treated wood), lengths of iron, and charcoal.

Log of Test Pit 18-TP-558

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 1.7	(Loose), damp, dark brown, silty, gravelly SAND mixed with wood fragments, lengths of iron, and scrap sheet metal (FILL).
S-2	1 to 2	4.5	1.7 to 2	(Loose), damp, black, silty SAND mixed with crystals of copper salts (FILL).
			2 to 3	(Loose), damp, dark brown, silty, gravelly SAND.
S-3	3 to 6	4.5	3 to 10	(Loose), damp, light brown, sandy GRAVEL.
S-4	8 to 10	4.5		

Bottom of 18-TP-558 at 10 feet, completed 4/30/92

Log of Test Pit 18-TP-559

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Loose), moist, medium brown, sandy GRAVEL.
S-2	3 to 6	5	1 to 9	(Loose), moist, medium gray, sandy GRAVEL with (medium dense), tan-brown GRAVEL lenses at depths of 5 and 6 feet.
S-3	8 to 10	5	9 to 10	(Medium dense), moist, tan-brown, sandy GRAVEL.

Bottom of 18-TP-559 at 10 feet, completed 5/1/92.

Note: S-1 is a 5-point composite from 0 to 1 foot within the Biazzi-Nitrator foundation.

Figure A-18-32

Log of Hand Auger Boring 18-HA-501

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 2	(Medium dense), damp, dark brown, silty, sandy GRAVEL with minor organics.
S-2	2 to 3	2 to 3	(Dense), damp, light brown, sandy GRAVEL.

Bottom of 18-HA-501 at 3 feet, completed 5/21/92.

Log of Hand Auger Boring 18-HA-502

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 3	(Medium dense), damp, brown, silty, gravelly SAND.
S-2	2 to 3		

Bottom of 18-HA-502 at 3 feet, completed 5/21/92.

Log of Hand Auger Boring 18-HA-503

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 3	(Dense), damp, dark brown, silty, gravelly SAND with minor organics and charcoal.
S-2	2 to 3		

Bottom of 18-HA-503 at 3 feet, completed 5/21/92.

Log of Test Pit 18-TP-600

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	3-6	0 to 1	(Medium dense), moist, dark brown, slightly silty, sandy GRAVEL.
S-2	8-10	1 to 10	(Medium dense), moist, brown, sandy to slightly sandy GRAVEL.

Bottom of 18-TP-600 at 10 feet, completed 11/5/92

Note: Test pit excavated adjacent to observed surficial residual DNT.

Log of Test Pit 18-TP-601

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	0 to 2.5	(Medium dense), moist, dark brown, slightly silty, sandy GRAVEL with abundant organics.
S-2	3 to 6	2.5 to 10	(Medium dense), moist, brown, slightly sandy to sandy GRAVEL.
S-3	8 to 10		

Bottom of 18-TP-601 at 10 feet, completed 11/5/92.

Log of Test Pit 18-TP-602

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	0 to 1	(Medium dense), moist, dark brown, sandy GRAVEL.
S-2	2 to 3	1 to 10	(Medium dense), moist, slightly sandy to sandy GRAVEL.
S-3	8 to 10		

Bottom of 18-TP-602 at 10 feet, completed 11/5/92.

Log of Test Pit 18-TP-603

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	0 to 0.75	(Medium dense), moist, dark brown, sandy GRAVEL (upper 3 to 4 inches have been graded and disturbed).
S-2	3 to 6	0.75 to 10	(Medium dense), moist, brown, slightly sandy to sandy GRAVEL.
S-3	8 to 10		

Bottom of 18-TP-603 at 10 feet, completed 11/5/92.

Note: Test pit excavated adjacent to observed surficial residual DNT.

Log of Test Pit 18-TP-604

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	3-6	0 to 1.5	(Medium dense), moist, dark brown, sandy GRAVEL with abundant organics.
S-2	8-10	1.5 to 10	(Medium dense), moist, brown, slightly sandy to sandy GRAVEL.

Bottom of 18-TP-604 at 10 feet, completed 11/5/92

Note: Test pit excavated adjacent to observed surficial residual DNT.

Figure A-18-36

Log of Test Pit 18-TR-101-N

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Medium dense), moist, brown, slightly sandy GRAVEL with abundant organics.
S-2	3-4	2-4	(Medium dense), moist, gray, sandy GRAVEL.

Bottom of 18-TR-101-N at 4 feet, completed 6/28/93.

Log of Test Pit 18-TR-101-S

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-3	0-1	0-2	(Medium dense), moist, brown, slightly sandy GRAVEL with abundant organics.
S-4	3-4	2-4	(Medium dense), moist, gray, sandy GRAVEL.

Bottom of 18-TR-101-S at 4 feet, completed 6/28/93.

Log of Test Pit 18-TR-102-W

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Loose), moist, dark brown TOPSOIL (FILL).
S-2	3-4	2-4	(Medium dense), moist, brown to gray, slightly sandy GRAVEL with concrete and copper debris (FILL).

Log of Test Pit 18-TR-102-E

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-3	0-1	0 to 2	(Loose), moist, brown TOPSOIL (FILL).
S-4	3-4	2-4	(Medium dense), moist, brown to gray, slightly sandy GRAVEL with intact concrete foundation.

Bottom of 18-TR-102-E at 4 feet, completed 6/28/93.

Log of Test Pit 18-TR-103-S

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-3	0-1	0 to 2	(Medium dense), moist, brown, slightly sandy GRAVEL.
S-4	3-4	2-4	(Medium dense), moist, brown to gray, slightly sandy GRAVEL (appears NATIVE).

Bottom of 18-TR-103-S at 4 feet, completed 6/28/93.

Log of Test Pit 18-TR-104-W

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0 to 2	(Loose), moist, brown sandy GRAVEL.
S-2	3-4	2-4	(Medium dense), moist, light gray, sandy GRAVEL.

Bottom of 18-TR-104-W at 4 feet, completed 6/28/93.

Figure A-18-38

Log of Test Pit 18-TR-104-E

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-3	1-2	0-2	(Loose), moist, brown, sandy GRAVEL with broken pieces of concrete debris (FILL).
S-4	3-4	2-4	(Medium dense), moist, light gray sandy GRAVEL.

Note:

Bottom of 18-TR-104-E at 4 feet, completed 6/29/93.

Log of Test Pit 18-TR-105-N

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-3	(Loose), moist, brown, sandy GRAVEL with organics and concrete debris (FILL).
S-2	3-4	3-4	(Loose), moist, light brown, sandy GRAVEL.

Note:

Bottom of 18-TR-105-N at 4 feet, completed 6/29/93.

Log of Test Pit 18-TR-105-S

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-3	0-1	0-3	(Loose), moist, brown, sandy GRAVEL.
S-4	3-4	3-4	(Loose), moist, brown, sandy GRAVEL.

Bottom of 18-TR-105-S at 4 feet, completed 6/29/93.

Log of Test Pit 18-TR-106-W

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Loose), moist, dark brown TOPSOIL with organics, wood and steel debris (FILL).
S-2	3-4	2-4	(Medium dense), moist, brown, sandy GRAVEL.

Note:

Encountered a 6-inch cast iron water main, creosoted timbers, steel pipes, and cables at 1 foot depth. Bottom of 18-TR-106-W at 4 feet, completed 6/29/93.

Log of Test Pit 18-TR-106-E

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-3	0-1	0-2	(Loose), moist, dark brown TOPSOIL with organics, wood and steel debris (FILL).
S-4	3-4	2-4	(Medium dense), moist, brown, sandy GRAVEL.

Bottom of 18-TR-106-E at 4 feet, completed 6/29/93.

Log of Test Pit 18-TR-107-N

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Loose), moist, dark brown TOPSOIL with dark stained burned wood-charcoal (FILL).
S-2	3-4	2-4	(Loose), moist, light brown, sandy GRAVEL with intermittent wood fragments (FILL).

Bottom of 18-TR-107-N at 4 feet, completed 6/29/93.

Log of Test Pit 18-TR-107-S

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-3	0-1	0-2	(Loose), moist, dark brown TOPSOIL with steel, copper, concrete, and plastic debris (FILL).
S-4	3-4	2-4	(Loose), moist, light brown to gray, sandy GRAVEL.

Bottom of 18-TR-107-S at 4 feet, completed 6/29/93.

Log of Test Pit 18-TR-108-E

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Loose), moist, brown TOPSOIL with concrete debris (FILL).
S-2	3-4	2-4	(Loose), moist, light brown, sandy GRAVEL with wood fragments (FILL).

Note:

Bottom of 18-TR-108-E at 4 feet, completed 6/30/93.

Log of Test Pit 18-TR-108-W

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-3	0-1	0-2	(Loose), moist, brown TOPSOIL with burned wood layer (FILL).
S-4	3-4	2-4	(Loose), moist, light brown, sandy GRAVEL.

Bottom of 18-TR-108-W at 4 feet, completed 6/30/93.

Log of Test Pit 18-TR-109-W

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Loose), moist, brown TOPSOIL.
S-2	3-4	2-4	(Loose), moist, light brown, sandy GRAVEL.

Bottom of 18-TR-109-W at 4 feet, completed 6/30/93.

Log of Test Pit 18-TR-109-E

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-3	0-1	0-2	(Loose), moist, brown TOPSOIL with burned wood layer (FILL).
S-4	3-4	2-4	(Loose), moist, light brown, sandy GRAVEL.

Bottom of 18-TR-109-E at 4 feet, completed 6/30/93.

Log of Test Pit 18-TR-110-N

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Loose), moist, brown TOPSOIL with abundant organics.
S-2	3-4	2-4	(Loose), moist, light brown, sandy GRAVEL.

Bottom of 18-TR-110-N at 4 feet, completed 6/30/93.

Log of Test Pit 18-TR-110-S

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-3	0-1	0-2	(Loose), moist, brown TOPSOIL with organics.
S-4	3-4	2-4	(Loose), moist, light brown, sandy GRAVEL.

Bottom of 18-TR-110-S at 4 feet, completed 6/30/93.

Log of Test Pit 18-TR-111-E

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-1.5	(Loose), moist, brown TOPSOIL with copper material (FILL).
S-2	3-4	1.5-4	(Loose), moist, light brown, sandy GRAVEL.

Bottom of 18-TR-111-E at 4 feet, completed 6/30/93.

Log of Test Pit 18-TR-111-W

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-3	0-1	0-1.5	(Loose), moist, brown TOPSOIL with organic matter.
S-4	3-4	1.5-4	(Loose), moist, light brown, sandy GRAVEL.

Bottom of 18-TR-111-W at 4 feet, completed 6/30/93.

Log of Test Pit 18-TR-112-S

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Loose), moist, brown TOPSOIL with steel debris (FILL).
S-2	3-4	2-4	(Loose), moist, light brown, sandy GRAVEL.

Bottom of 18-TR-112-S at 4 feet, completed 6/30/93.

Log of Test Pit 18-TR-112-N

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-3	0-1	0-2	(Loose), moist, brown TOPSOIL .
S-4	3-4	2-4	(Loose), moist, light brown, sandy GRAVEL.

Bottom of 18-TR-112-N at 4 feet, completed 6/30/93.

Log of Test Pit 18-TR-113-S

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-4	(Loose), moist, brown TOPSOIL with mixed debris (FILL).
S-2	3-4	0-4	(Loose), moist, light brown, TOPSOIL with mixed debris (FILL).

Bottom of 18-TR-113-W at 4 feet, completed 6/30/93.

Note: Brick, steel, ceramics, and cable debris along with 6-inch ceramic pipe leading from an adjacent structure was encountered.

Figure A-18-44

Log of Test Pit 18-TR-113-N

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-3	0-1	0-4	(Very loose), moist, dark brown TOPSOIL with mixed debris (FILL).
S-4	3-4	0-4	(Loose), moist, dark brown TOPSOIL with mixed debris (FILL).

Note:

Brick, steel, ceramics, and cable debris along with 6-inch ceramic pipe leading from an adjacent structure was encountered. Bottom of 18-TR-113-N at 4 feet, completed 6/30/93.

Log of Test Pit 18-TR-114-W

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-3	0-1	0-2	(Loose), moist, brown TOPSOIL with abundant organics.
S-4	3-4	2-4	(Loose), moist, light brown, sandy GRAVEL.

Bottom of 18-TR-114-W at 4 feet, completed 7/1/93.

Log of Test Pit 18-TR-115-N

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Loose), moist, brown TOPSOIL.
S-2	3-4	2-4	(Loose), moist, light brown, sandy GRAVEL.

Bottom of 18-TR-115-N at 4 feet, completed 7/1/93.

Log of Test Pit 18-TR-115-S

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-3	0-1	0-2	(Loose), moist, brown TOPSOIL.
S-4	3-4	2-4	(Loose), moist, light brown, sandy GRAVEL.

Bottom of 18-TR-115-S at 4 feet, completed 7/1/93.

Log of Test Pit 18-TR-116-E

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Loose), moist, brown TOPSOIL.
S-2	3-4	2-4	(Loose), moist, light brown, sandy GRAVEL with patches of gravelly SAND.

Bottom of 18-TR-116-E at 4 feet, completed 7/1/93.

Log of Test Pit 18-TR-116-W

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-3	0-1	0-2	(Loose), moist, brown TOPSOIL.
S-4	3-4	2-4	(Loose), moist, light brown, sandy GRAVEL with patches of gravelly SAND.

Bottom of 18-TR-116-W at 4 feet, completed 7/1/93.

Log of Test Pit 18-TR-Depression

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-1.5	(Medium dense), moist, light brown, sandy GRAVEL.
S-2	3-4	1.5-4	(Medium dense), moist, light brown, sandy GRAVEL.

Bottom of 18-TP-Depression at 4 feet, completed 7/7/93.

Log of Test Pit 18-TR-117-W

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	1-2	0-3	(Loose), wet, brown TOPSOIL mixed with concrete debris (FILL).
S-2	4-5	3-5	(Loose), wet, light brown, sandy GRAVEL.

Bottom of 18-TR-117-W at 5 feet, completed 7/2/93.

Log of Test Pit 18-TR-117-E

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-3	0-1	0-3	(Loose), wet, brown TOPSOIL.
S-4	3-4	3-5	(Loose), wet, light brown, sandy GRAVEL.

Bottom of 18-TR-117-E at 5 feet, completed 7/2/93.

Log of Test Pit 18-TR-118-N

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Loose), moist, brown SAND.
S-2	3-4	2-4	(Loose), moist, light brown, sandy GRAVEL.

Bottom of 18-TR-118-N at 4 feet, completed 7/2/93.

Log of Test Pit 18-TR-118-S

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-3	0-1	0-2	(Loose), moist, brown TOPSOIL.
S-4	3-4	2-4	(Loose), moist, light brown, sandy GRAVEL with patches of gravelly SAND.

Bottom of 18-TR-118-S at 4 feet, completed 7/2/93.

Log of Test Pit 18-TR-119-N

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Loose), moist, light brown SAND.
S-2	3-4	2-4	(Loose), moist, light brown, sandy GRAVEL.

Bottom of 18-TR-119-N at 4 feet, completed 7/2/93.

Figure A-18-48

Log of Test Pit 18-TR-119-S

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-3	0-1	0-2	(Loose), moist, light brown SAND with burned wood layer (FILL).
S-4	3-4	2-4	(Loose), moist, light brown, sandy GRAVEL.

Bottom of 18-TR-119-S at 4 feet, completed 7/2/93.

TEST PITS PERFORMED AT GRID SAMPLE LOCATIONS

Log of Test Pit 18-TP-GS-16

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	1-2	0-2	(Medium dense), dry, light brown, sandy GRAVEL with organics.
S-2	3-4	2-4	(Medium dense), dry, light brown, sandy GRAVEL.

Note:

Undisturbed concrete occupied the 0 to 1 foot interval (transport angel walks). Bottom of 18-TP-GS-16 at 4 feet, completed 7/7/93.

Log of Test Pit 18-TP-GS-17

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Medium dense), dry, light brown, sandy GRAVEL with organics.
S-2	3-4	2-4	(Medium dense), dry, light brown, sandy GRAVEL.

Bottom of 18-TP-GS-17 at 4 feet, completed 7/7/93.

Log of Test Pit 18-TP-GS-22

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Medium dense), dry, light brown, sandy GRAVEL with abundant organics.
S-2	3-4	2-4	(Medium dense), dry, light brown, sandy GRAVEL.

Bottom of 18-TP-GS-17 at 4 feet, completed 7/7/93.

Log of Test Pit 18-TP-GS-23

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Medium dense), moist, brown, silty, sandy GRAVEL with abundant organics.
S-2	3-4	2-4	(Medium dense), moist, light brown, sandy GRAVEL with cobbles.

Bottom of 18-TP-GS-23 at 4 feet, completed 7/7/93.

Log of Test Pit 18-TP-GS-24

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1(R)	0-1	0-2	(Medium dense), moist, brown, silty, sandy GRAVEL with abundant organics.
S-2	3-4	2-4	(Medium dense), moist, light brown, sandy GRAVEL with cobbles.

Bottom of 18-TP-GS-24 at 4 feet, completed 7/7/93.

Log of Test Pit 18-TP-GS-25

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Medium dense), moist, brown, silty, sandy GRAVEL with abundant organics.
S-2	3-4	2-4	(Medium dense), moist, light brown, sandy GRAVEL with cobbles.

Bottom of 18-TP-GS-25 at 4 feet, completed 7/7/93.

Log of Test PW 18-TP-GS-27

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Loose), moist, brown, slightly gravelly SAND with abundant organics. Berm material.
S-2	3-4	2-4	(Medium dense), moist, light brown, sandy GRAVEL.

Note: Material encountered during 0-2 foot interval was from berms placed around buildings.
Bottom of 18-TP-GS-27 at 4 feet, completed 7/6/93.

Log of Test PW 18-TP-GS-28

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Medium dense), moist, brown, slightly sandy GRAVEL with abundant organics.
S-2	3-4	2-4	(Medium dense), moist, light brown, sandy GRAVEL.

Bottom of 18-TP-GS-28 at 4 feet, completed 7/6/93.

Log of Test PW 18-TP-GS-32

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Medium dense), moist, brown, slightly sandy GRAVEL with abundant organics.
S-2	3-4	2-4	(Medium dense), moist, light brown, sandy GRAVEL.

Bottom of 18-TP-GS-32 at 4 feet, completed 7/6/93.

Log of Test Pit 18-TP-GS-33

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Medium dense), moist, brown, slightly sandy GRAVEL with abundant organics.
S-2	3-4	2-4	(Medium dense), moist, light brown, sandy GRAVEL.

Bottom of 18-TP-GS-33 at 4 feet, completed 7/6/93.

Log of Test Pit 18-TP-GS-38

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-3	(Medium dense), moist, brown, slightly sandy GRAVEL with abundant organics.
S-2	3-4	3-4	(Medium dense), moist, light brown, sandy GRAVEL.

Bottom of 18-TP-GS-38 at 4 feet, completed 7/6/93.

Log of Test Pit 18-TP-GS-40

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Medium dense), moist, brown, slightly sandy GRAVEL with abundant organics.
S-2	3-4	2-4	(Medium dense), moist, light brown, sandy GRAVEL.

Bottom of 18-TP-GS-40 at 4 feet, completed 7/7/93.

Log of Test Pit 18-TP-GS-41

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Medium dense), moist, brown, slightly sandy GRAVEL with abundant organics.
S-2	3-4	2-4	(Medium dense), moist, light brown, sandy GRAVEL.

Bottom of 18-TP-GS-41 at 4 feet, completed 7/6/93.

Log of Test Pit 18-TP-GS-42

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Medium dense), moist, brown, slightly sandy GRAVEL with abundant organics.
S-2	3-4	2-4	(Medium dense), moist, light brown, sandy GRAVEL.

Bottom of 18-TP-GS-42 at 4 feet, completed 7/6/93.

Log of Test Pit 18-TP-GS-43

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Medium dense), moist, brown, slightly sandy GRAVEL with abundant organics.
S-2	3-4	2-4	(Medium dense), moist, light brown, sandy GRAVEL.

Bottom of 18-TP-GS-43 at 4 feet, completed 7/6/93.

Log of Test Pit 18-TP-GS-47

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-1	(Loose), moist, brown, slightly sandy GRAVEL with abundant organics.
S-2	3-4	1-4	(Loose), moist, light brown, sandy GRAVEL with cobbles.

Bottom of 18-TP-GS-47 at 4 feet, completed 7/12/93.

Log of Test Pit 18-TP-GS-49

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Loose), dry, dark brown, slightly sandy GRAVEL with abundant organics.
S-2	3-4	2-4	(Loose), dry, light brown to light gray, sandy GRAVEL with cobbles.

Bottom of 18-TP-GS-49 at 4 feet, completed 7/12/93.

Log of Test Pit 18-TP-GS-53

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Loose), dry, light brown, slightly sandy GRAVEL with organics.
S-2	3-4	2-4	(Medium dense), dry, light brown, sandy GRAVEL with cobbles.

Bottom of 18-TP-GS-53 at 4 feet, completed 7/6/93.

Log of Test Pit 18-TP-GS-54

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-1	(Loose), dry, light brown, slightly sandy GRAVEL with organics.
S-2	3-4	1-4	(Medium dense), dry, light brown, sandy GRAVEL with cobbles.

Bottom of 18-TP-GS-54 at 4 feet, completed 7/6/93.

Log of Test Pit 18-TP-GS-59

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Loose), moist, black to light brown, slightly sandy GRAVEL with organics.
S-2	3-4	2-4	(Medium dense), moist, light brown, sandy GRAVEL with cobbles.

Bottom of 18-TP-GS-59 at 4 feet, completed 7/6/93.

Log of Test Pit 18-TP-GS-62

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Loose), dry, light brown, slightly sandy GRAVEL with organics.
S-2	3-4	2-4	(Medium dense), dry, light brown, sandy GRAVEL with cobbles.

Bottom of 18-TP-GS-62 at 4 feet, completed 7/6/93.

Log of Test Pit 18-TP-GS-70

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-1.5	(Loose), dry, dark to light brown, slightly sandy GRAVEL with organics.
S-2	3-4	1.5-4	(Medium dense), dry, light brown, sandy GRAVEL with cobbles.

Note:

Sand content in gravel layer decreasing with depth.

Bottom of 18-TP-GS-70 at 4 feet, completed 7/6/93.

Log of Test Pit 18-TP-GS-72

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Loose), moist, dark brown, slightly sandy GRAVEL with organics.
S-2	3-4	2-4	(Medium dense), moist, light brown, sandy GRAVEL with cobbles.

Note:

Layer of gravel dipping from south to north.

Bottom of 18-TP-GS-72 at 4 feet, completed 7/6/93.

Log of Test Pit 18-TP-GS-81

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0-1	0-2	(Loose), moist, light brown, slightly sandy GRAVEL with organics.
S-2	3-4	2-4	(Medium dense), moist, light brown, sandy GRAVEL with cobbles.

Bottom of 18-TP-GS-81 at 4 feet, completed 7/6/93.

AREA 1234
EXPLORATION LOGS

Log of Test Pit 1234-TP-501

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.1	(Loose), moist, dark brown, gravelly SAND (abundant organics).
S-2	3 to 6.0	5	1.1 to 8.0	(Medium dense), moist, brown, very sandy GRAVEL (roots observed at a depth of 6 feet).
S-3	8 to 10	5	8 to 10	(Medium dense), moist, gray-brown, sandy GRAVEL.

Bottom of 1234-TP-501 at 10 feet, completed 5/18/92.

Log of Test Pit 1234-TP-502

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 4	(Loose), moist, brown, gravelly SAND.
S-2	3 to 6	5	4 to 6	(Medium dense), moist, gray-brown, gravelly SAND.
S-3	8 to 10	5	6 to 10	(Medium dense), moist, gray-brown, gravelly SAND.

Bottom of 1234-TP-502 at 10 feet, completed 5/18/92.

Log of Test Pit 1234-TP-503

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.5	(Medium dense), moist, brown, sandy GRAVEL with some metal debris and roots (see Note 2).
			1.5 to 3	(Loose), moist, yellow-brown and gray SAND.
S-2	3 to 6	5	3 to 10	(Medium dense), moist, gray-brown and rusty-brown, sandy GRAVEL with minor tar-like substance between 3 and 4 feet (see Note 3).
S-3	8 to 10	5		

Bottom of 1234-TP-503 at 10 feet, completed 5/21/92.

Notes:

- 1) Test pit excavated in area that was graded over during interim source removal.
- 2) Observed traces of potential asbestos-containing material.
- 3) Observed tar-like substance, similar to that observed on the bottom of NG gutters.

Log of Test Pit 1234-TP-504

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Loose), moist, brown, gravelly SAND with minor organics.
S-2	3 to 6	5	1 to 3.5	(Loose), moist, tan, slightly gravelly SAND.
S-3	8 to 10	5	3.5 to 10	(Medium dense), moist, gray-brown, sandy GRAVEL with interbedded gravel layers.

Bottom of 1234-TP-504 at 10 feet, completed 5/19/92.

Note:

Observed "NG wash gutter" in test pit side wall from 1 to 2 feet in depth. 6 inches of gray sand observed directly below the gutter.

Log of Test Pit 1234-TP-505

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Loose), dense, light brown, sandy GRAVEL.
S-2	3 to 6	5	1 to 6	(Medium dense), moist, brown, sandy GRAVEL with large concrete block, bricks, and large roots.
			6 to 8	(Medium dense), moist, brown, gravelly SAND.
S-3	8 to 10	5	8 to 10	(Medium dense), moist, gray-brown, sandy GRAVEL (Native).

Bottom of 1234-TP-505 at 10 feet, completed 5/19/92.

Log of Test Pit 1234-TP-506

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Loose), damp, light brown, sandy GRAVEL.
S-2	3 to 6	5	2 to 10	(Medium dense), moist, brown, sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 1234-TP-506 at 10 feet, completed 5/20/92.

Log of Test Pit 1234-TP-507

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Loose), moist, reddish brown, gravelly SAND.
S-2	3 to 6	5	2 to 10	(Medium dense), moist, gray-brown, sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 1234-TP-507 at 10 feet, completed 5/18/92.

Log of Test Pit 1234-TP-508

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 3	(Loose), dense, tan, sandy GRAVEL with occasional roots.
S-2	3 to 6	5	3 to 6	(Medium dense), moist, brown, sandy GRAVEL with minor roots.
S-3	8 to 10	5	6 to 10	(Medium dense), moist, gray-brown, sandy GRAVEL with interbedded gravel layers.

Bottom of 1234-TP-508 at 10 feet, completed 5/18/92.

Log of Test Pit 1234-TP-509

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Medium dense), moist, brown, very sandy GRAVEL.
			1 to 2	(Medium dense), moist, gray-brown, sandy GRAVEL.
S-2	3 to 6	5	2 to 10	(Medium dense), moist, yellow-brown, slightly sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 1234-TP-509 at 10 feet, completed 5/21/92.

Log of Test Pit 1234-TP-510

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Medium dense), moist, silty, gravelly SAND with a few bricks and roots.
S-2	3 to 6	5	1 to 10	(Medium dense), moist, yellow-brown, sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 1234-TP-510 at 10 feet, completed 5/21/92.

Log of Test Pit 1234-TP-511

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Medium dense), moist, dark brown, very sandy GRAVEL with minor organics.
S-2	3 to 6	5	2 to 4	(Medium dense), moist, yellow-brown, sandy GRAVEL.
S-3	8 to 10	5	4 to 10	(Medium dense), moist, gray-brown, sandy GRAVEL with interbedded gravel layers.

Bottom of 1234-TP-511 at 10 feet, completed 5/21/92.

Log of Test Pit 1234-TP-512

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Loose), moist, dark brown, gravelly SAND with roots.
S-2	3 to 6	5	1 to 8	(Medium dense), moist, gray-brown, sandy GRAVEL with interbedded gravel layers and minor iron staining.
S-3	8 to 10	5	8 to 10	(Loose), moist, brown SAND.

Bottom of 1234-TP-512 at 10 feet, completed 5/19/92.

Log of Test Pit 1234-TP-513

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Loose), moist, light brown, gravelly SAND with pieces of ceramic tile (FILL).
S-2	3 to 6	5	2 to 10	(Medium dense), moist, yellow-brown sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 1234-TP-513 at 10 feet, completed 5/19/92.

Log of Test Pit 1234-TP-514

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.2	(Medium dense), damp, dark brown, silty, gravelly SAND.
S-2	3 to 6	5	1.2 to 10	(Loose), moist, light brown, sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 1234-TP-514 at 10 feet, completed 5/19/92.

Log of Test Pit 1234-TP-515

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Medium dense), damp, dark brown, silty, gravelly SAND.
S-2	3 to 6	5	2 to 10	(Medium dense), moist, light brown, sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 1234-TP-515 at 10 feet, completed 5/19/92.

Log of Test Pit 1234-TP-516

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.5	(Loose), moist, dark brown, gravelly SAND with minor organics.
S-2	3 to 6	5	1.5 to 10	(Medium dense), moist, yellow-brown, sandy GRAVEL with alternating layers of yellow-brown and gray-brown sandy GRAVEL to a depth of 6 feet and yellow-brown, sandy GRAVEL below 6 feet.
S-3	8 to 10	5		

Bottom of 1234-TP-516 at 10 feet, completed 5/20/92.

Log of Test Pit 1234-TP-517

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 3	(Loose), moist, dark brown, gravelly SAND with abundant roots.
S-2	3 to 6	5	3 to 10	(Medium dense), moist, yellow-brown, sandy GRAVEL with alternating layers of yellow-brown and gray-brown, sandy GRAVEL.
S-3	8 to 10	5		

Bottom of 1234-TP-517 at 10 feet, completed 5/20/92.

Log of Test Pit 1234-TP-518

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2.5	(Loose), moist, dark brown SAND with minor organics.
S-2	3 to 6	5	2.5 to 8.5	(Loose), moist, gray-brown SAND.
S-3	8 to 10	5	8.5 to 10	(Medium dense), moist, gray-brown, sandy GRAVEL.

Bottom of 1234-TP-518 at 10 feet, completed 5/19/92.

Log of Test Pit 1234-TP-519

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Loose), moist, brown, gravelly SAND with large piece of wood from 0.5 to 2 feet.
S-2	3 to 6	5	2 to 10	(Medium dense), moist, brown, sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 1234-TP-519 at 10 feet, completed 5/20/92.

Log of Test Pit 1234-TP-520

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Loose), moist, reddish brown, very gravelly SAND.
			1 to 3	(Medium dense), moist, gray-brown, sandy GRAVEL.
S-2	3 to 6	5	3 to 10	(Medium dense), moist, gray-brown, slightly sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 1234-TP-520 at 10 feet, completed 5/18/92.

Log of Test Pit 1234-TP-521

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Loose), moist, dark brown, gravelly SAND (FILL).
			1 to 2	(Medium dense), moist, light brown, sandy GRAVEL with 4-inch layer of burnt wood at 1 foot depth (FILL).
S-2	3 to 6	5	2 to 8	(Medium dense), moist, gray-brown, sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5	8 to 10	(Dense), moist, gray-brown GRAVEL.

Bottom of 1234-TP-521 at 10 feet, completed 5/18/92.

Log of Test Pit 1234-TP-522

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.5	(Loose), moist, dark brown, gravelly SAND with minor organics.
S-2	3 to 6	5	1.5 to 10	(Medium dense), moist, yellow-brown, sandy GRAVEL with alternating layers of yellow-brown and gray-brown, sandy GRAVEL.
S-3	8 to 10	5		

Bottom of 1234-TP-522 at 10 feet, completed 5/20/92.

Log of Test Pit 1234-TP-523

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.5	(Loose), moist, brown, gravelly SAND with minor organics.
S-2	3 to 6	5	1.5 to 8	(Medium dense), moist, gray-brown, slightly sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5	8 to 10.0	(Medium dense), wet, gray-brown, slightly sandy GRAVEL.

Bottom of 1234-TP-523 at 10 feet, completed 5/20/92.

Log of Test Pit 1234-TP-524

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Loose), damp, brown, gravelly SAND.
S-2	3 to 6	5	1 to 10	(Medium dense), moist, light brown, sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 1234-TP-524 at 10 feet, completed 5/18/92.

Note:

Test pit excavated in the bottom of a previous 4-foot-deep trench.

Log of Test Pit 1234-TP-525

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Loose), moist, brown, sandy GRAVEL with minor organics.
S-2	3 to 6	5	1 to 8	(Medium dense), moist, gray-brown, slightly sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5	8 to 10	(Medium dense), wet, gray-brown, slightly sandy GRAVEL.

Bottom of 1234-TP-525 at 10 feet, completed 5/20/92.

Note:

Test pit excavated in bottom of a previous 4-foot-deep trench.

Log of Test Pit 1234-TP-526

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Loose), dense, dark brown, silty, gravelly SAND.
S-2	3 to 6	5	1 to 10	(Dense), moist, yellow-brown, sandy GRAVEL with interbedded gravel layers.
S-3	8 to 10	5		

Bottom of 1234-TP-526 at 10 feet, completed 5/19/92.

Log of Test Pit 1234-TP-527

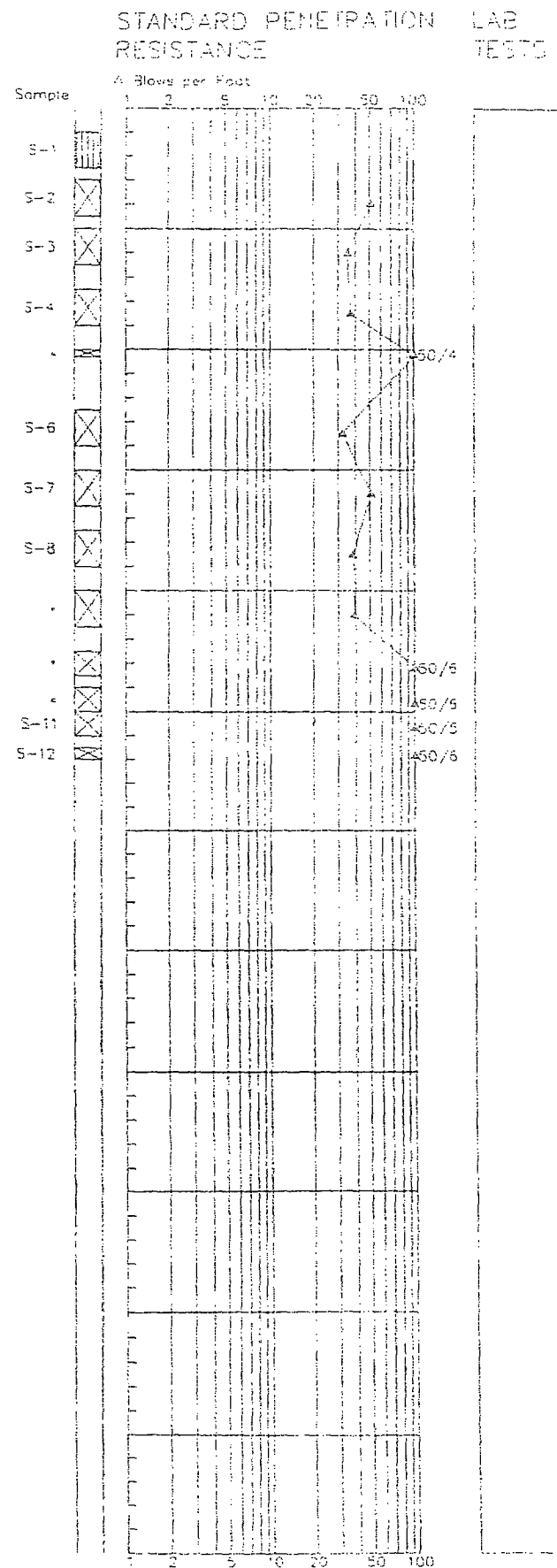
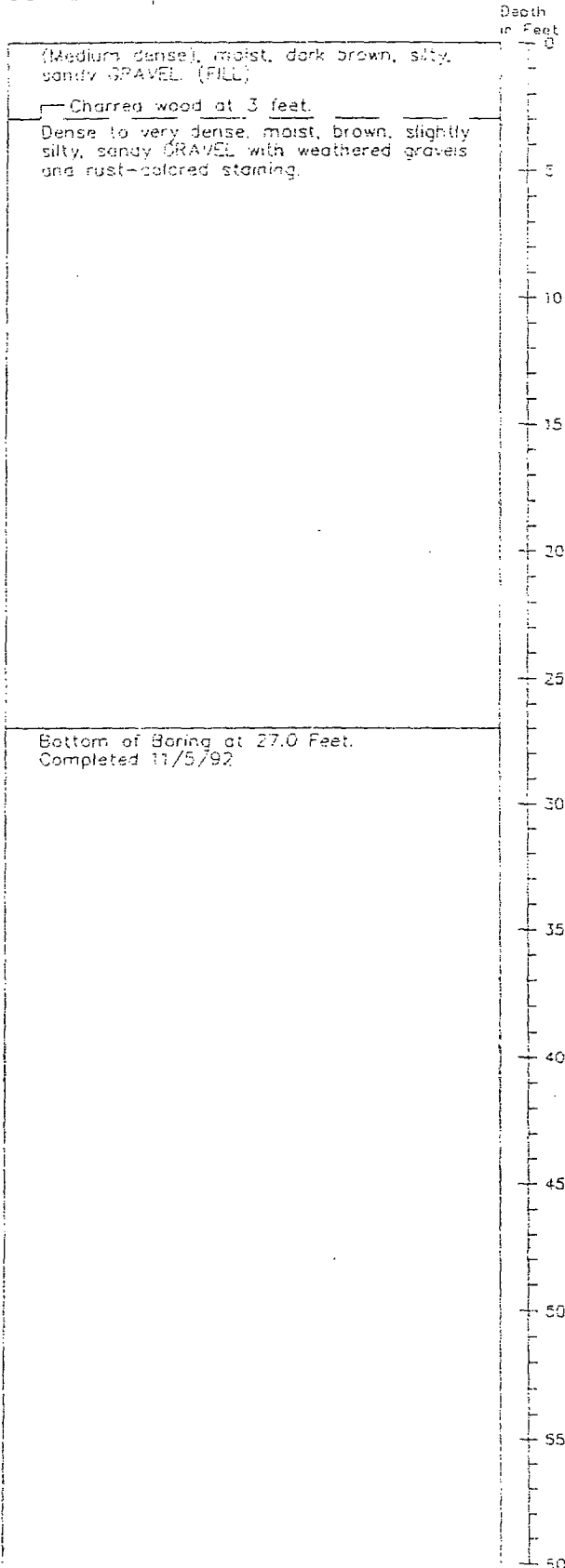
Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.5	(Loose), moist, reddish brown, gravelly SAND with minor organics.
S-2	3 to 6	5	1.5 to 10	(Medium dense), moist, gray-brown, sandy GRAVEL with alternating layers of gray-brown and brown, sandy GRAVEL.
S-3	8 to 10	5		

Bottom of 1234-TP-527 at 10 feet, completed 5/18/92.

AREA 25
EXPLORATION LOGS

Boring Log 25-B-501

Soil Descriptions



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Figure A-25-1

Log of Test Pit 25-TP-501

Ground Surface Elevation Approximately 211.0 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 0.8	(Medium dense), moist, silver-gray, slightly sandy CRUSHED ROCK (FILL).
			0.8 to 3	(Medium dense), moist, medium brown, slightly silty, sandy GRAVEL (NATIVE).
S-2	3 to 6	5	3 to 10	(Medium dense), moist, tan-brown, sandy GRAVEL.
S-3	8 to 10	5		

Bottom of 25-TP-501 at 10 feet, completed 4/22/92.

Log of Test Pit 25-TP-502

Ground Surface Elevation Approximately 211.1 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 3	(Medium dense), moist, medium brown, slightly silty, sandy GRAVEL with small roots in upper foot and a 2-inch layer of black, slightly silty, sandy gravel at 0.5 foot.
S-2	3 to 6	5	3 to 10	(Medium dense), moist, light brown, sandy GRAVEL with a 4-inch layer of very sandy gravel at 5 feet and abundant non-sandy gravel lenses.
S-3	8 to 10	5		

Bottom of 25-TP-502 at 10 feet, completed 4/22/91.

Log of Test Pit 25-TP-503

Ground Surface Elevation Approximately 209.0 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	4	0 to 1	(Medium dense), moist, grayish black, silty, gravelly SAND with debris (FILL) (see Note 1 below).
S-2(R)	1 to 3	4	1 to 4	(Medium dense), moist, reddish brown, sandy GRAVEL.
			4 to 5	(Medium dense), moist, dark yellowish brown GRAVEL.
S-3	5 to 7	3.5	5 to 10	(Medium dense), moist, dark yellowish brown, sandy GRAVEL with interbedded silver-gray sandy gravel.
S-4	8 to 10	4		

Bottom of 25-TP-503 at 10 feet, completed 4/22/92.

Notes:

- 1) Debris observed from 0 to 1 foot included 2-inch-diameter lead pipe, 2-foot-long 4-inch-diameter steel pipe, and scattered bricks. 3.5- by 6-foot concrete slab at surface on northeast side of excavation. Bottom of slab was stained yellow.
- 2) Deteriorated gravels from depth of 1 to 10 feet.

Log of Test Pit 25-TP-504

Ground Surface Elevation Approximately 211.1 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	7	0 to 3	1-inch layer of silver-gray, sandy GRAVEL over (medium dense), moist, reddish brown, sandy GRAVEL.
S-2	3 to 6	6	3 to 10	(Medium dense), moist, medium gray, sandy GRAVEL.
S-3	8 to 10	5		

Bottom of 25-TP-504 at 10 feet, completed 4/22/92.

Log of Test Pit 25-TP-505

Ground Surface Elevation Approximately 209.3 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 4	(Medium dense), moist, medium brown, slightly silty, sandy GRAVEL with small roots to depth of 1.5 feet (see note below).
S-2	3 to 6	5	4 to 10	(Dense), moist, medium gray, sandy GRAVEL interbedded with light brown, sandy gravel and some cobbles up to 12 inches in size.
S-3	8 to 10	5		

Bottom of 25-TP-505 at 10 feet, completed 4/22/92.

Note:

Observed a brick and cement wall between depths of 1.5 and 4 feet on the southwest wall of the excavation, with orange-brown soil adjacent to it.

Log of Test Pit 25-TP-506

Ground Surface Elevation Approximately 209.8 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 2	2 inches of medium gray, slightly silty SAND over (medium dense), moist, medium brown, slightly silty, sandy GRAVEL with small roots.
S-2	3 to 6	5	2 to 10	(Medium dense), moist, light brown, sandy GRAVEL with interbedded layers of gravel and a 0.5-foot-thick layer of medium gray, very sandy gravel at 5.5 feet.
S-3	8 to 10	5		

Bottom of 25-TP-506 at 10 feet, completed 4/22/92.

Log of Test Pit 25-TP-507

Ground Surface Elevation Approximately 209.8 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	4.5	0 to 3	(Medium dense), moist, medium brown, slightly silty, sandy GRAVEL with abundant small roots.
S-2	3 to 6	4.5	3 to 10	(Medium dense), moist, light brown, sandy GRAVEL with a lens of gravel from 5 to 7 feet.
S-3	8 to 10	4.5		

Bottom of 25-TP-507 at 10 feet, completed 4/23/92.

Log of Test Pit 25-TP-508

Ground Surface Elevation Approximately 208.1 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 3	(Medium dense), moist, mottled red-brown, medium brown, and medium gray, slightly silty, sandy GRAVEL.
S-2	3 to 6	5	3 to 10	(Medium dense), moist, medium gray, sandy GRAVEL with scattered cobbles and interbedded layers of gravel.
S-3	8 to 10	5		

Bottom of 25-TP-508 at 10 feet, completed 4/23/92.

Log of Test Pit 25-TP-509

Ground Surface Elevation Approximately 205.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 10	Weathered GRAVEL on surface over (medium dense), moist, light grayish brown, sandy GRAVEL with scattered areas of darker yellow staining and interbedded gravel layers.
S-2	3 to 6	4.5		
S-3	8 to 10	4.5		

Bottom of 25-TP-509 at 10 feet, completed 4/23/92.

Log of Test Pit 25-TP-510

Ground Surface Elevation Approximately 212.6 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.5	(Medium dense), moist, black, slightly silty, sandy GRAVEL.
S-2	3 to 6	4.5	1.5 to 4.5	(Medium dense), moist, tan-brown, sandy GRAVEL with a few interbedded gravel layers.
S-3	8 to 10	4.5	4.5 to 10	(Medium dense), moist, medium gray, sandy GRAVEL with interbedded gravel layers.

Bottom of 25-TP-510 at 10 feet, completed 4/23/92.

Log of Test Pit 25-TP-511

Ground Surface Elevation Approximately 201.1 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4	0 to 2	(Medium dense), moist, grayish black, slightly silty, sandy GRAVEL.
			2 to 3	(Medium dense), moist, reddish brown, slightly silty, sandy GRAVEL.
S-2	3 to 6	4	3 to 8	(Medium dense), moist, orange-brown, gray, tan-brown, and black (interlayered), slightly gravelly, silty SAND.
S-3	8 to 10	4	8 to 10	(Medium dense), moist, reddish brown and tan-brown, sandy GRAVEL.

Bottom of 25-TP-511 at 10 feet, completed 4/23/92.

Log of Test Pit 25-TP-512

Ground Surface Elevation Approximately 210.0 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	0 to 10	(Medium dense), moist, dark gray, sandy GRAVEL.
S-2	3 to 6		
S-3	8 to 10		

Bottom of 25-TP-512 at 10 feet, completed 11/4/92.

Note: Test pit excavated in area previously graded during interim source removal.

Log of Test Pit 25-TP-513

Ground Surface Elevation Approximately 208.3 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	0 to 1.5	Three inches of grass over (medium dense), moist, dark brownish gray, slightly silty, sandy GRAVEL with weathered/deteriorated gravels.
S-2	3 to 6	1.5 to 4	(Medium dense), moist, to damp, reddish brown, sandy GRAVEL with scattered weathered gravels and minor rusty staining.
S-3	8 to 10	4 to 10	(Dense), damp, brown, slightly sandy to sandy GRAVEL.

Bottom of 25-TP-513 at 10 feet, completed 11/4/92.

Log of Test Pit 25-TP-514

Ground Surface Elevation Approximately 209.3 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	0 to 1.75	Two inches of grass over (medium dense), moist, dark brownish gray, silty, sandy GRAVEL with deteriorated gravels (FILL?).
S-2	3 to 6	1.75 to 8	(Medium dense), damp, gray, silty, sandy GRAVEL with extremely deteriorated gravels.
S-3	8 to 10	8 to 12	(Dense), damp, gray, sandy GRAVEL with extremely deteriorated gravels.
S-4	12 to 14	12 to 14	(Dense), damp, brownish gray, sandy GRAVEL with bleached-looking gravels.

Bottom of 25-TP-514 at 14 feet, completed 11/4/92.

Note:

End of clay pipe visible at approximately 1-foot depth on north test pit wall. There was no evidence that the pipe extended through the test pit location.

Log of Test Pit 25-TP-515

Ground Surface Elevation Approximately 209.7 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 1	Three inches of grass over (medium dense), moist, dark brown, sandy GRAVEL.
		1 to 2.5	(Medium dense), moist, brown, slightly sandy GRAVEL.
S-2	3 to 6	2.5 to 6	(Medium dense), moist, brown GRAVEL.

Bottom of 25-TP-515 at 7 feet, completed 11/3/92.

Note: Eight-inch-diameter steel water line encountered at 2.5 feet. Excavation stopped at 7 feet because digging in the collapsing gravels may have compromised the pipe.

Log of Test Pit 25-TP-516

Ground Surface Elevation Approximately 210.2 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 1	Two inches of grass over (medium dense), moist, brown, sandy GRAVEL (FILL?).
S-2	1.5 to 3.5	1 to 3.5	(Medium dense), moist, dark gray, silty, sandy GRAVEL with deteriorated gravels.
S-3	4 to 6	3.5 to 10	(Dense), moist, brown, slightly sandy to non-sandy GRAVEL.
S-4	8 to 10		

Bottom of 25-TP-516 at 10 feet, completed 11/4/92.

Log of Test Pit 25-TP-517

Ground Surface Elevation Approximately 210.7 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 0.5	(Medium dense), moist, brown, sandy GRAVEL with minor brick fragments (FILL).
S-2	3 to 6	0.5 to 6	(Medium dense), moist, brown, non-sandy to slightly sandy GRAVEL.

Bottom of 25-TP-517 at 6 feet, completed 11/4/92.

Note: Excavation stopped at 6 feet due to collapsing of the excavation side walls.

Log of Test Pit 25-TP-518

Ground Surface Elevation Approximately 210.1 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	0 to 10	(Medium dense), moist, brown, sandy GRAVEL.
S-2	3 to 6		
S-3	8 to 10		

Bottom of 25-TP-518 at 10 feet, completed 11/4/92.

Log of Test Pit 25-TP-519

Ground Surface Elevation Approximately 210.4 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	0 to 0.5	(Medium dense), moist, dark brown, slightly sandy GRAVEL with minor lead debris.
S-2	3 to 6	0.5 to 7	(Medium dense), moist, brown, sandy GRAVEL.
S-3	8 to 10	7 to 10	(Dense), moist, brown, slightly sandy to non-sandy GRAVEL.

Bottom of 25-TP-519 at 10 feet, completed 11/4/92.

Log of Test Pit 25-TP-521

Ground Surface Elevation Approximately 210.6 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	0 to 1.5	(Medium dense), moist, dark brown, sandy GRAVEL with abundant organics (roots).
		1.5 to 3	(Medium dense), moist, brown, sandy GRAVEL with minor rust-colored staining.
S-2(R)	3 to 6	3 to 4.5	(Medium dense), moist, grayish brown, sandy to slightly sandy GRAVEL with minor sand interbeds.
S-3(R)	8 to 10	4.5 to 10	(Medium dense), moist, brown, sandy to slightly sandy GRAVEL with minor sand interbeds.

Bottom of 25-TP-521 at 10 feet, completed 11/2/92.

Log of Test Pit 25-TP-522

Ground Surface Elevation Approximately 212.1 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	0 to 3.5	(Medium dense), moist, dark brown, sandy GRAVEL with abundant organics (roots).
S-2(R)	3 to 6	3.5 to 10	(Medium dense), moist to damp, brown, sandy GRAVEL with abundant sand interbeds.
S-3(R)	8 to 10		

Bottom of 25-TP-522 at 10 feet, completed 11/2/92.

Log of Test Pit 25-TP-523

Ground Surface Elevation Approximately 211.8 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	0 to 1.5	(Dense), moist, dark brown, slightly silty, sandy GRAVEL with abundant organics (roots).
		1.5 to 3	(Dense), moist, light brown, sandy GRAVEL with minor rust-colored staining and roots to a depth of 2.5 feet.
S-2(R)	3 to 6	3 to 10	(Very dense), moist, brownish gray, slightly sandy to sandy GRAVEL with sand interbeds.
S-3(R)	8 to 10		

Bottom of 25-TP-523 at 10 feet, completed 11/2/92.

Log of Test Pit 25-TP-524

Ground Surface Elevation Approximately 213.8 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 2	Three inches of forest duff over (dense), moist, brown, sandy GRAVEL (FILL?).
		2 to 3	(Dense), moist, dark brown, sandy GRAVEL with abundant roots.
S-2	3 to 6	3 to 10	(Dense), damp, brown, non-sandy to sandy GRAVEL with gravelly sand interbeds.
S-3	8 to 10		

Bottom of 25-TP-524 at 10 feet, completed 11/2/92.

Log of Test Pit 25-TP-525

Ground Surface Elevation Approximately 211.0 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	0 to 1.5	Five inches of grass over (medium dense), moist, brown, sandy GRAVEL with noticeable "sweet" odor and minor organics.
S-2(R)	3 to 6	1.5 to 10	(Medium dense), moist, brown, gravelly SAND and sandy GRAVEL with strong "sweet" odor.
S-3(R)	8 to 10		

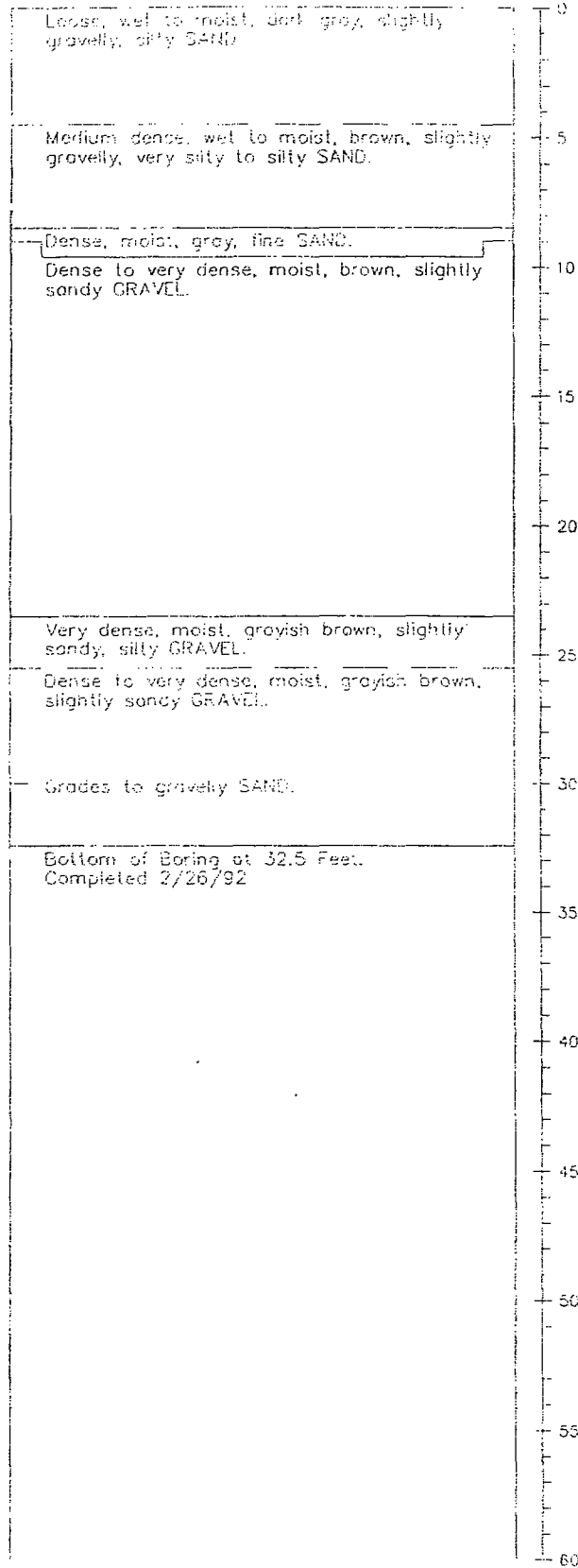
Bottom of 25-TP-525 at 10 feet, completed 11/2/92.

AREA 26
EXPLORATION LOGS

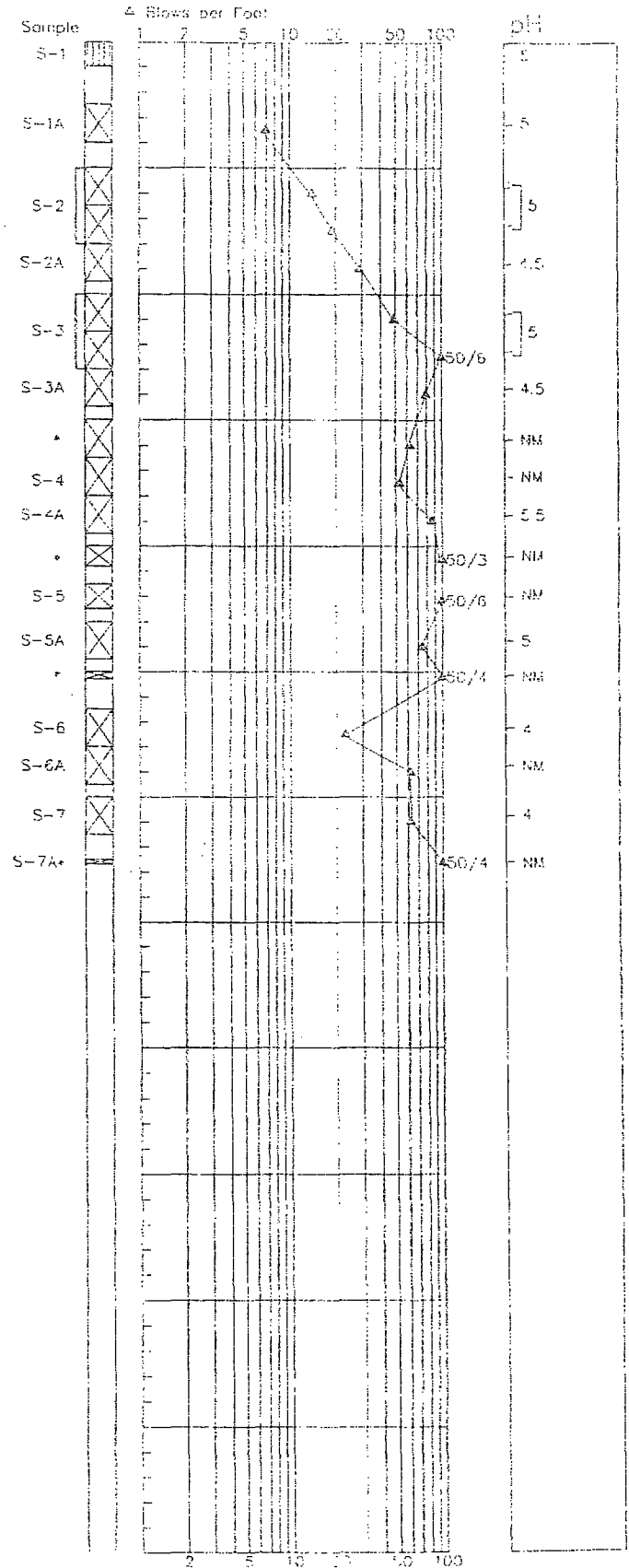
Boring Log 26-B-501

Soil Descriptions

Ground Surface Elevation in Feet 170.7



STANDARD PENETRATION RESISTANCE



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Soil Descriptions

Ground Surface Elevation in Feet 169.4

(Dense), moist, dark gray, slightly gravelly, silty SAND.

Grades to silty, sandy GRAVEL.

Dense, moist, brown, sandy GRAVEL.

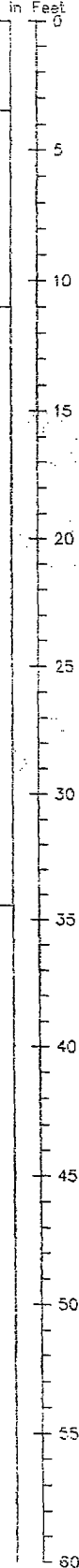
Loose to dense, wet to moist, dark gray GRAVEL.

Grades to silty, sandy GRAVEL.

6-inch zone of wet soils.

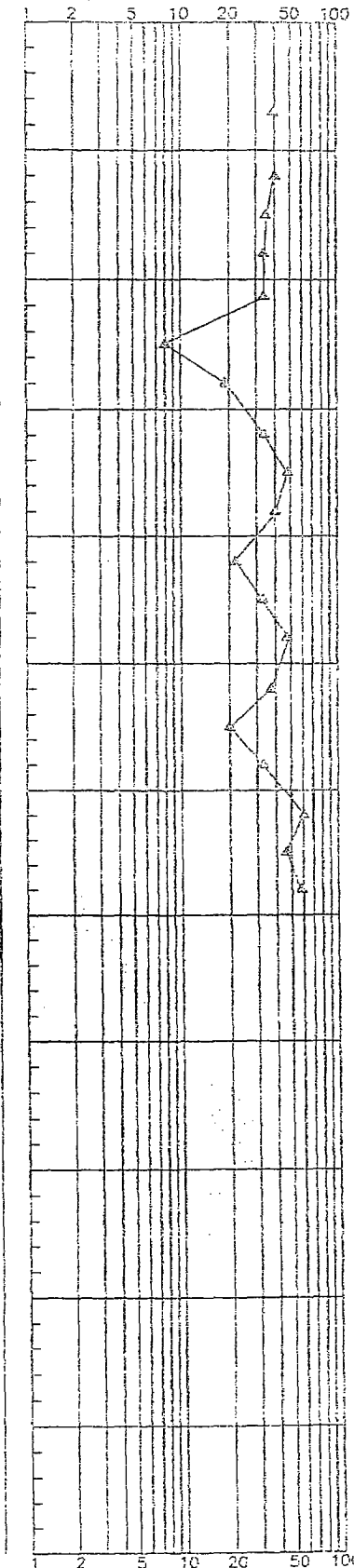
Bottom of Boring at 34.5 Feet.
Completed 2/27/92.

Depth
in Feet

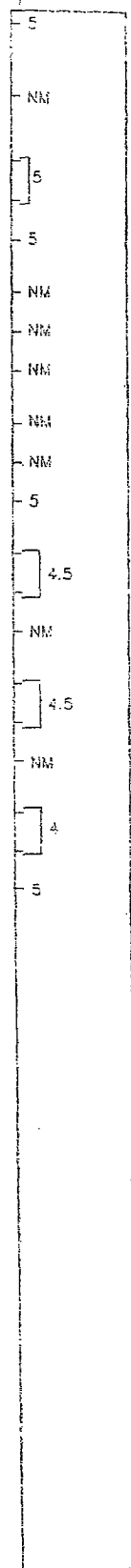


STANDARD PENETRATION RESISTANCE

Δ Blows per Foot



pH



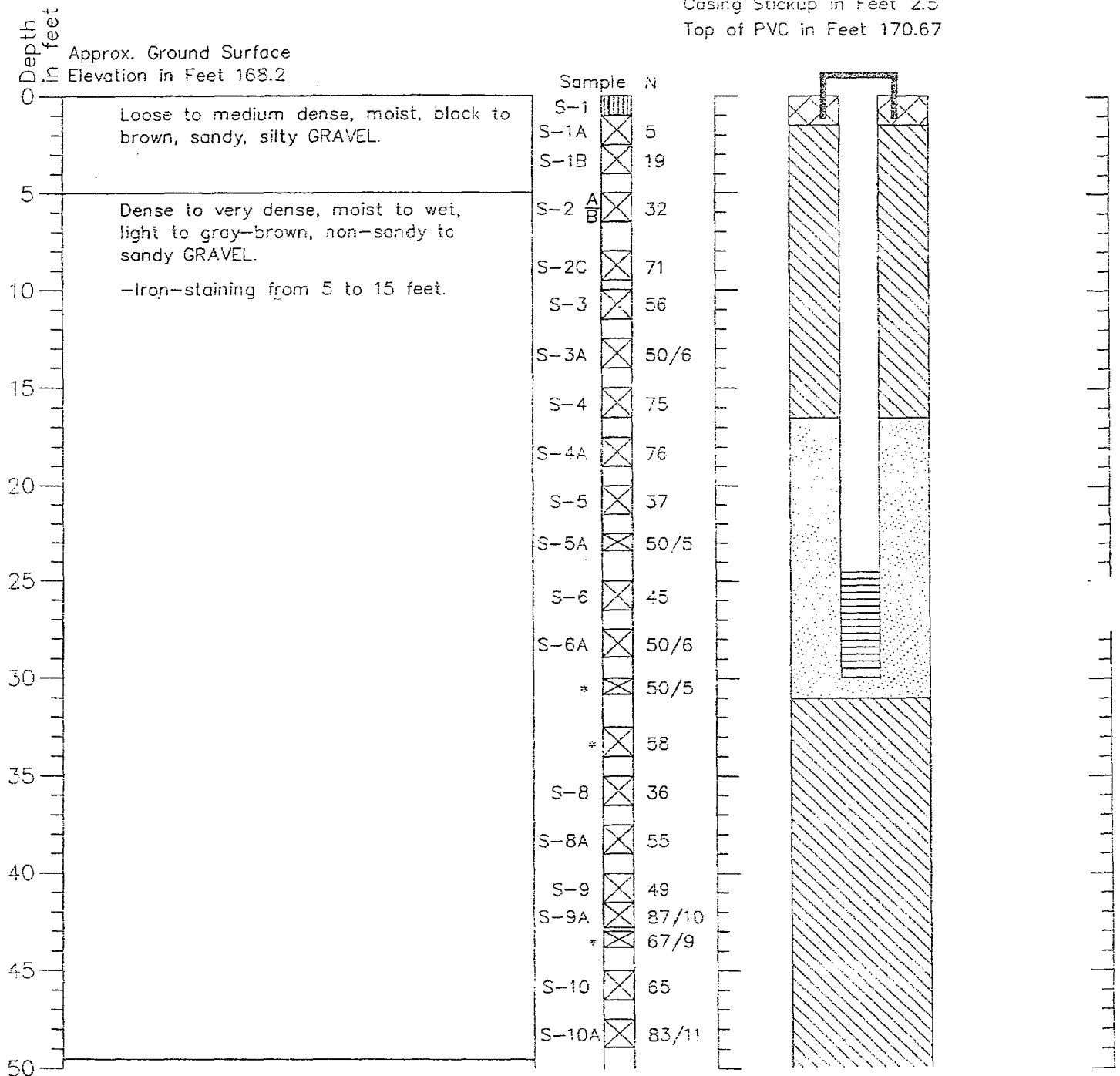
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Boring Log and Construction Data for Monitoring Well 26-B-503

Geologic Log

Monitoring Well Design

Casing Stickup in Feet 2.5
Top of PVC in Feet 170.67



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

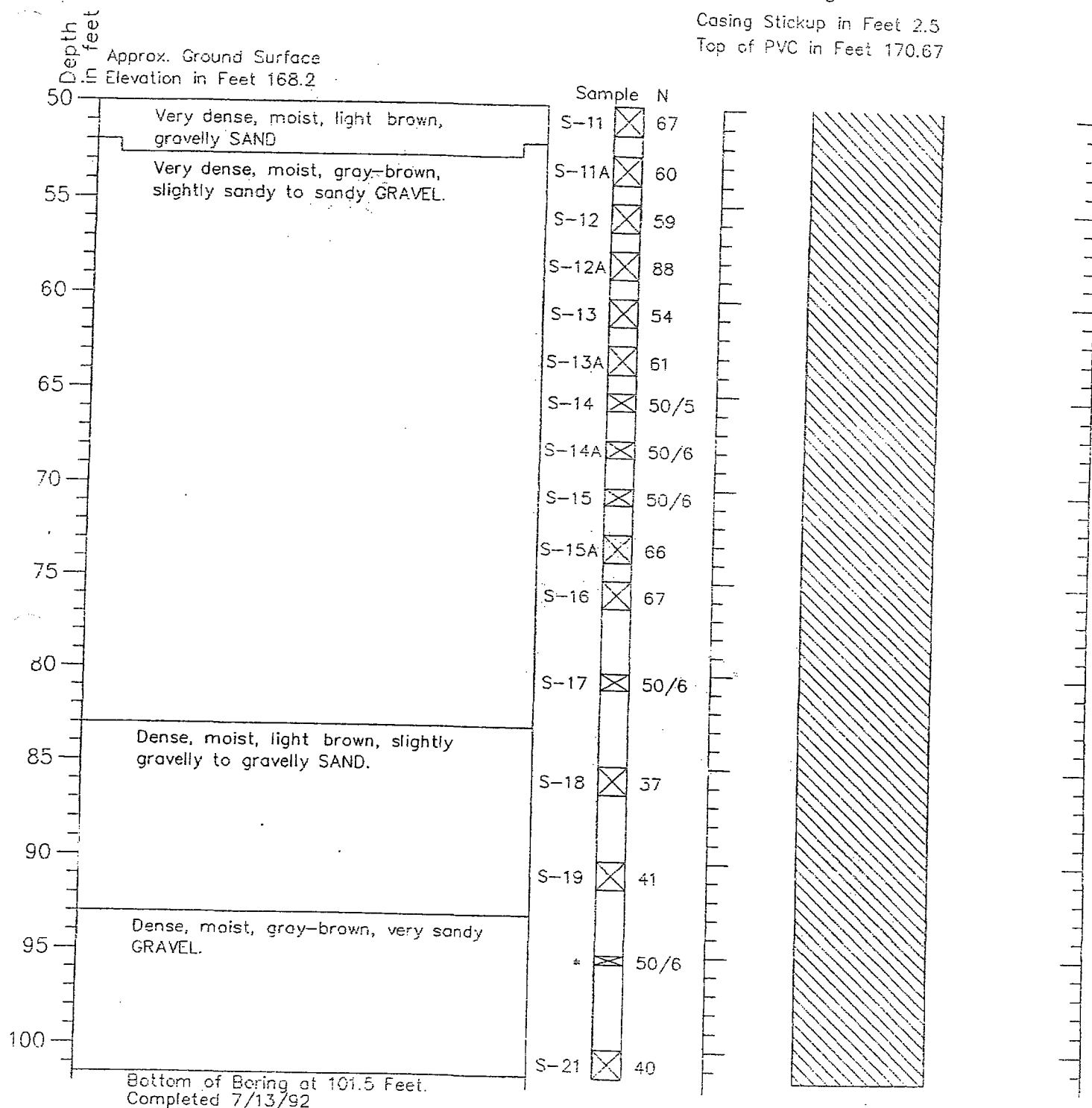
Figure A-26-3

Boring Log and Construction Data for Monitoring Well 26-B-503

Geologic Log

Monitoring Well Design

Casing Stickup in Feet 2.5
Top of PVC in Feet 170.67



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Figure A-26-3

Log of Test Pit 26-TP-501

Ground Surface Elevation Approximately 170.5 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 3	(Loose), damp, dark gray, silty, gravelly SAND.
S-2	3 to 6	5	3 to 10	(Medium dense), damp to moist, brown, sandy GRAVEL with 6-inch-thick lens of iron-stained gravel at a depth of 3 feet.
S-3	8 to 10	5		

Bottom of 26-TP-501 at 10 feet, completed 3/23/92.

Log of Test Pit 26-TP-502

Ground Surface Elevation Approximately 174.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 2.5	(Loose), damp, dark gray, silty, gravelly SAND with minor brick debris at surface.
S-2	3 to 6	4	2.5 to 10	(Medium dense), moist, gray and brown, silty, fine SAND. Sandy GRAVEL observed at a depth of 10 feet.
S-3	8 to 10	4		

Bottom of 26-TP-502 at 10 feet, completed 3/23/92.

Log of Test Pit 26-TP-503

Ground Surface Elevation Approximately 169.8 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Loose), damp, dark gray, silty, gravelly SAND.
S-2	3 to 6	5	1 to 10	(Medium dense), moist, brown, sandy GRAVEL with abundant thin non-sandy gravel lenses.
S-3	8 to 10	5		

Bottom of 26-TP-503 at 10 feet, completed 3/23/92.

Log of Test Pit 26-TP-504

Ground Surface Elevation Approximately 174.7

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.5	(Loose), damp, dark gray, silty, sandy GRAVEL.
			1.5 to 4	(Medium dense), damp, brown, sandy GRAVEL.
S-2	3 to 6	5.5	4 to 5.5	(Loose), moist, brown GRAVEL.
			5.5 to 8	(Dense), moist, brown SAND.
S-3	8 to 10	5	8 to 10	(Medium dense), moist, brown, sandy GRAVEL.

Bottom of 26-TP-504 at 10 feet, completed 3/23/92.

Log of Test Pit 26-TP-505

Ground Surface Elevation Approximately 182.1 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	6	0 to 2	(Loose), damp, dark gray, silty, gravelly SAND.
S-2	3 to 6	5.5	2 to 4	(Medium dense), moist, brown, silty SAND.
S-3	8 to 10	6	4 to 10	(Medium dense), moist, brown, sandy GRAVEL.

Bottom of 26-TP-505 at 10 feet, completed 3/23/92.

Log of Test Pit 26-TP-506

Ground Surface Elevation Approximately 176.5 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Loose), damp, dark gray, silty, gravelly SAND.
S-2	3 to 6	5	2 to 2.5	(Medium dense), damp, dark brown, sandy GRAVEL.
S-3	8 to 10	5	2.5 to 10	(Medium dense), moist, brown, sandy GRAVEL with lenses of slightly gravelly sand.

Bottom of 26-TP-506 at 10 feet, completed 3/24/92.

Log of Test Pit 26-TP-507

Ground Surface Elevation Approximately 172.6 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 3	(Loose), damp, dark gray, silty, gravelly SAND with very thin zone of dark brown sand at a depth of 3 feet.
S-2	3 to 6	5.5	3 to 10	(Medium dense), moist, brown, sandy GRAVEL with interbedded non-sandy gravel lenses.
S-3	8 to 10	5		

Bottom of 26-TP-507 at 10 feet, completed 3/24/92.

Log of Test Pit 26-TP-508

Ground Surface Elevation Approximately 196.0 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 3	(Loose), damp, dark gray, silty, sandy GRAVEL with lead debris at surface and bricks to a depth of 3 feet (FILL).
S-2	3 to 6	5	3 to 4	(Medium dense), damp, brown, sandy GRAVEL, which thickens toward Unit 26-B kettle center (FILL).
			4 to 6	(Medium dense), damp, dark gray, silty, gravelly SAND with bricks (FILL).
S-3	8 to 10	4.5	6 to 10	(Dense), damp, brown, sandy GRAVEL.

Bottom of 26-TP-508 at 10 feet, completed 3/24/92.

Note:

Bricks were typically mortared together and appeared to have been pier blocks or footings for a former building.

Log of Test Pit 26-TP-509

Ground Surface Elevation Approximately 197.0 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 3.5	(Loose), damp, dark gray, silty, gravelly SAND with abundant roots. Grades to dark brown at a depth of 3 feet.
S-2	3 to 6	4.5	3.5 to 10	(Medium dense), damp, brown, very sandy GRAVEL with discontinuous lenses of gray, gravelly sand between depths of 7 and 7.5 feet.
S-4	7 to 7.5	4.5		
S-3	8 to 10	5		

Bottom of 26-TP-509 at 10 feet, completed 3/24/92.

Log of Test Pit 26-TP-510

Ground Surface Elevation Approximately 208.3 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 3	(Loose), damp, dark gray, silty, sandy GRAVEL with bricks and bleached gravels at surface (FILL). Two lengths of 4-inch-diameter ceramic pipe (filled with soil) encountered between depths of 1 and 2 feet.
S-2	3 to 6	5	3 to 10	(Loose), damp, brown, slightly sandy GRAVEL with minor iron staining.
S-3	8 to 10	5		

Bottom of 26-TP-510 at 10 feet, completed 3/24/92.

Log of Test Pit 26-TP-511

Ground Surface Elevation Approximately 209.7 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 3	Blended rocks at surface over (loose), damp, dark gray and brown, silty, sandy GRAVEL with bricks, wood, and ceramic debris (FILL).
S-2	3 to 6	3 to 11	Twelve-inch-diameter ceramic pipeline overlying (dense), damp, gray, slightly sandy GRAVEL with indications of weathering. Distinct zone of yellow and brown staining observed immediately below pipeline extending to bottom of excavation.
S-2A	4 to 6		
S-3	8 to 10		

Bottom of 26-TP-511 at 11 feet, completed 3/25/92.

Notes:

- 1) S-2 is sample of unstained gray soil; S-2A and S-3 are samples of stained soil.
- 2) Ceramic pipeline slopes toward the south.

Log of Test Pit 26-TP-512

Ground Surface Elevation Approximately 211.2 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 3	(Loose), damp, dark gray, silty, sandy GRAVEL with concrete, brick, and wood debris (FILL). Three-inch-diameter lead pipe encountered at a depth of 1 foot.
S-2	3 to 6	5.5	3 to 10	(Medium dense), damp, brown, sandy GRAVEL.
S-3	8 to 10	5		

Bottom of 26-TP-512 at 10 feet, completed 3/25/92.

Note:

First two attempts to excavate within the former nitric acid recovery building foundation hit refusal when brick floor encountered. Location subsequently moved next to southwest corner of foundation.

Log of Test Pit 26-TP-513

Ground Surface Elevation Approximately 210.6 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2.5	(Loose), damp, dark gray, silty, sandy GRAVEL with brick debris in upper 1.5 feet (FILL). Four-inch-diameter ceramic pipe observed along south side of excavation at depth of 2 to 3 feet. Small area of yellowish brown staining observed beneath pipe coupling.
S-2	3 to 6	4	2.5 to 10	(Medium dense), damp, brown, slightly sandy GRAVEL. Large area of yellowish brown staining from depths of 4 to 10 feet on west side of excavation away from observed ceramic pipe.
S-3	8 to 10	4		

Bottom of 26-TP-513 at 10 feet, completed 3/25/92.

Notes:

- 1) S-2 is sample of unstained soil; S-3 is sample of stained soil.
- 2) Ceramic pipe slopes toward the south.

Log of Test Pit 26-TP-514

Ground Surface Elevation Approximately 211.1 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet*	Soil Description
S-1	0 to 1	4	0 to (3 - 4)	(Loose), damp, dark gray, silty, sandy GRAVEL interbedded with gray SAND; brown, sandy GRAVEL; and purplish red, silty SAND (ash-like) and containing brick debris and deteriorated gravels. Lens of brownish yellow sandy gravel at depth of 1.5 to 2 feet.
S-3	3 to 6	4	(3 - 4) to 7	(Dense to very dense), damp, yellowish brown, slightly sandy GRAVEL.
S-4	6 to 7	4		

Bottom of 26-TP-514 at 7 feet, completed 3/25/92.

Notes:

- 1) Refusal at 7 feet due to cemented GRAVEL, which looked like native material but could not be penetrated by the backhoe.
- 2) Uneven contact between dark gray, silty, sandy GRAVEL and brownish yellow, sandy GRAVEL. Contact at 4 feet in center of pit, sloping up to 3 feet along the south and north sides. Range in depths across test pit indicated in parentheses.

Figure A-26-13

Log of Test Pit 26-TP-515

Ground Surface Elevation Approximately 211.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2.25	(Loose), damp, dark brown, silty, gravelly SAND with occasional brick debris.
S-2	3 to 6	5	2.25 to 10	(Medium dense), damp, brown, slightly sandy GRAVEL.
S-3	8 to 10	5		

Bottom 26-TP-515 at 10 feet, completed 3/25/92.

Log of Test Pit 26-TP-516

Ground Surface Elevation Approximately 169.8 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 1	(Loose), damp, dark gray, silty, gravelly SAND.
S-2	3 to 4	1 to 4	(Medium dense), moist, dark brown, slightly silty, sandy GRAVEL.
S-2A	4 to 6	4 to 10	(Medium dense), moist, brown, gravelly, silty SAND with organics and wood chips (becomes less silty and more gravelly with depth).
S-3	8 to 10		

Bottom of 26-TP-516 at 10 feet, completed 6/30/92.

Log of Test Pit 26-TP-517

Ground Surface Elevation Approximately 210.0 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 1	(Loose), damp, tan, silty, sandy GRAVEL.
S-2	1 to 2	1 to 2	(Medium dense), damp, gray-brown and iron-stained, silty, sandy GRAVEL.
S-3	3 to 5	2 to 5	(Medium dense), moist, whitish gray and iron-stained, sandy GRAVEL.

Bottom of 26-TP-517 at 5.0 feet, completed 5/29/92.

Log of Test Pit 26-TP-518

Ground Surface Elevation Approximately 208.8 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 2.5	(Loose), damp, gray-brown, silty, sandy GRAVEL with wood chunk (creosote odor) at depth of 2.5 feet.
S-2	1 to 2		
S-3	3 to 5	2.5 to 5	(Medium dense), damp, yellow brown and iron-stained, sandy GRAVEL.

Bottom of TP-518 at 5.0 feet, completed 6/29/92.

Log of Test Pit 26-TP-519

Ground Surface Elevation Approximately 210.7 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 5	(Medium dense), damp, light brown, silty, sandy GRAVEL with roots to depth of 4.5 feet.
S-2	1 to 2		
S-3	3 to 5		

Bottom of TP-519 at 5.0 feet, completed 6/29/92.

Log of Test Pit 26-TP-520

Ground Surface Elevation Approximately 211.7 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 2	(Loose), damp, brown, silty, sandy GRAVEL with minor brick fragments to depth of 1 foot.
S-2	1 to 2		
S-3	3 to 5	2 to 5	(Medium dense), moist, yellow-brown and iron-stained, sandy GRAVEL.

Bottom of TP-520 at 5.0 feet, completed 6/29/92.

Log of Test Pit 26-TP-521

Ground Surface Elevation Approximately 211.0 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 1.5	(Loose), damp, medium brown, silty, sandy GRAVEL.
S-2	1 to 2		
S-3	3 to 5	1.5 to 5	(Medium dense), moist, yellow-brown and iron-stained, sandy GRAVEL with cobbles.

Bottom of TP-521 at 5.0 feet, completed 6/29/92.

Log of Test Pit 26-TP-522

Ground Surface Elevation Approximately 212.7 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 2	(Loose), damp, brown, silty, sandy GRAVEL.
S-2	1 to 2		
S-3	3 to 5	2 to 5	(Medium dense), moist, yellow-brown and iron-stained, sandy GRAVEL.

Bottom of TP-522 at 5.0 feet, completed 6/29/92.

Log of Hand Auger Boring 26-HA-501

Ground Surface Elevation Approximately 183.4 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 3	(Medium dense), damp, brown, slightly silty, sandy GRAVEL with brick debris and glass.
S-2	1 to 2		
S-3	2 to 3		

Bottom of 26-HA-501 at 3.0 feet, completed 6/29/92.

Log of Hand Auger Boring 26-HA-502

Ground Surface Elevation Approximately 199.0 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 3	(Medium dense), moist, brown and gray, silty, sandy GRAVEL with weathered green-stained gravels.
S-2	1 to 2		
S-3	2 to 3		

Bottom of 26-HA-502 at 3.0 feet, completed 6/29/92.

Log of Hand Auger Boring 26-HA-503
Ground Surface Elevation Approximately 198.4 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 2	(Medium dense), damp, dark to medium brown, silty, gravelly SAND with weathered gravels.
S-2	1 to 2		
S-3	2 to 3	2 to 3	(Medium dense), damp, gray, slightly gravelly, silty SAND.

Bottom of 26-HA-503 at 3.0 feet, completed 6/29/92.

Log of Hand Auger Boring 26-HA-504
Ground Surface Elevation Approximately 190.3 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 3	(Medium dense), dry to damp, light brown, silty, sandy GRAVEL.
S-2	1 to 2		
S-3	2 to 3		

Bottom of 26-HA-504 at 3.0 feet, completed 6/29/92.

Log of Hand Auger Boring 26-HA-505
Ground Surface Elevation Approximately 201.4 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 3	(Medium dense), damp, light and dark brown, silty, sandy GRAVEL with wood fragments.
S-2	1 to 2		
S-3	2 to 3		

Bottom of 26-HA-505 at 3.0 feet, completed 6/29/92.

Note:

Scattered wood debris found at depth of 1 to 3 feet.

AREA 31
EXPLORATION LOGS

Boring Log 31-B-501

Soil Descriptions

Ground Surface Elevation in Feet 212.5

Medium dense, wet, dark brown to black, slightly silty, sandy GRAVEL with scattered lead, nails, and brick fragments (FILL)

Very dense, moist, light brown, sandy GRAVEL with brick fragments. (FILL)

No bricks.

Dense, moist, light brown, very gravelly SAND

Very dense, moist, light brown, very sandy GRAVEL.

Dense, moist, light brown, slightly sandy GRAVEL.

Dense to very dense, sandy GRAVEL.

Becomes wet.

Grades to slightly sandy GRAVEL.

Dense, wet, gray, slightly sandy to sandy GRAVEL.

Very dense, wet, gray brown, slightly sandy GRAVEL.

Bottom of Boring at 26.0 Feet.
Completed 2/18/92

Depth
in Feet

0

5

10

15

20

25

30

35

40

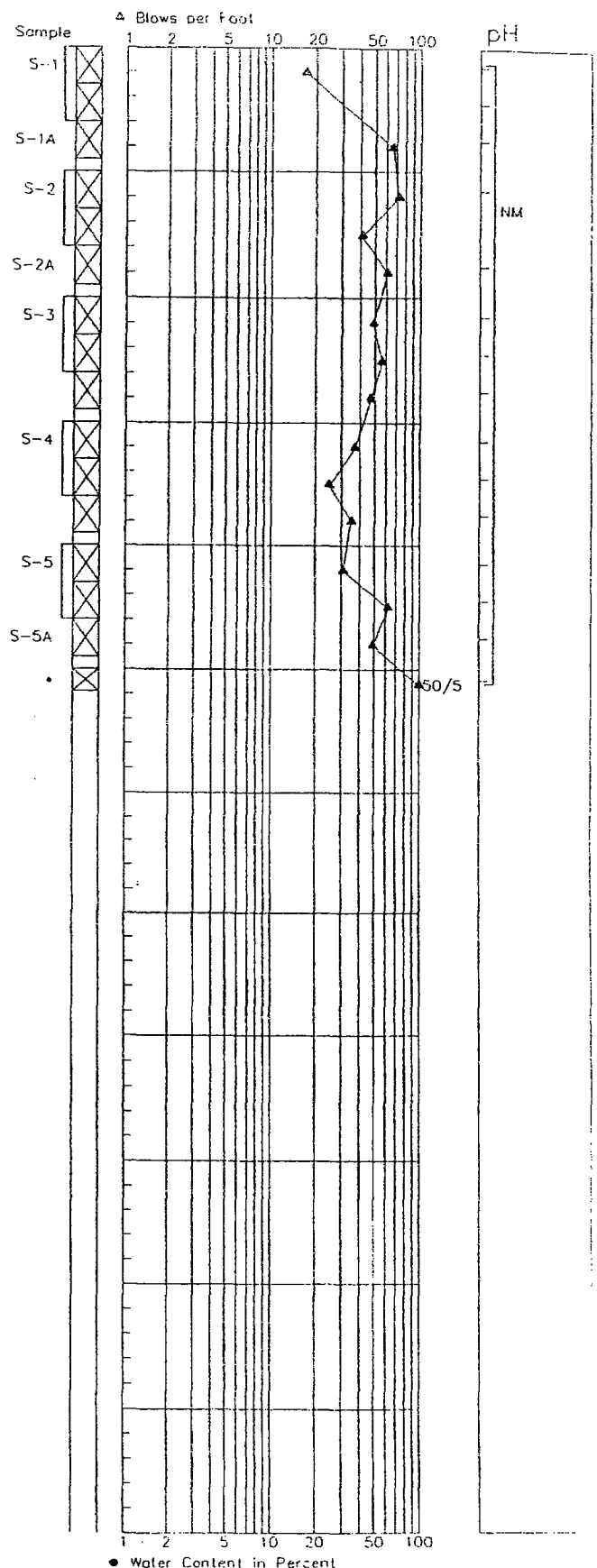
45

50

55

60

STANDARD PENETRATION RESISTANCE



- 1 Refer to Figure A-1 for explanation of descriptions and symbols.
- 2 Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
- 3 Groundwater level, if indicated, is at time of drilling

Boring Log 31-B-002

Soil Descriptions

Ground Surface Elevation in Feet 212.7

(Loose), wet, black, silty, gravelly, fine to medium SAND.
Dense to very dense, moist, light brown, very sandy GRAVEL.
Dense, moist, light brown, sandy GRAVEL.
Medium dense, moist, light brown, sandy GRAVEL.
Grades to slightly sandy GRAVEL.
Medium dense, moist, gray, sandy GRAVEL.
Becomes wet.

Bottom of Boring at 18.0 Feet
Completed 2/29/92.

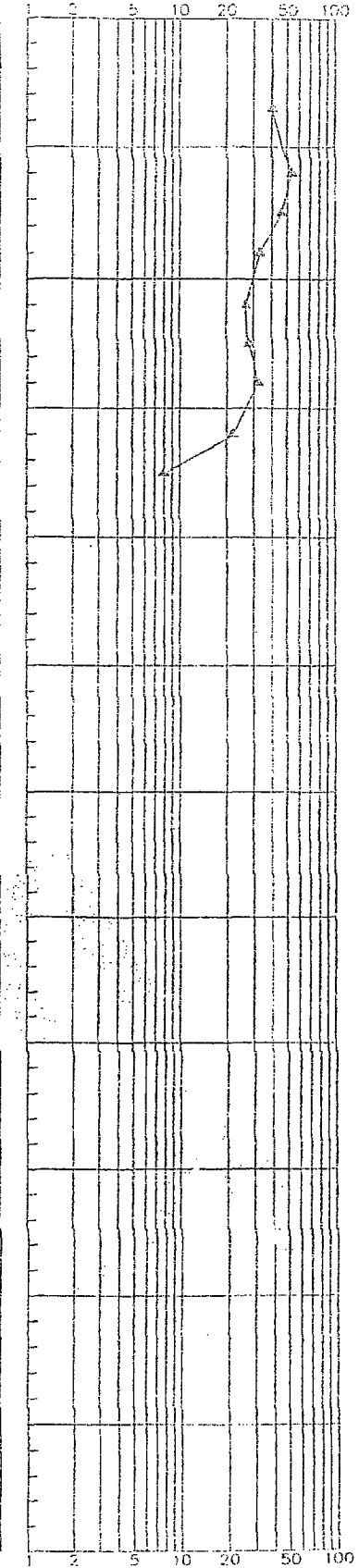
Depth in Feet
0
5
10
15
20
25
30
35
40
45
50
55
60

▽
ATD

STANDARD PENETRATION RESISTANCE

Δ Blows per Foot

Sample
S-1(R)
S-1A
S-2
S-2A
S-3
S-4
S-4



pH
6.6
6.5
7.3
6.8
6.5
NM
6.5

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Boring Log 31-B-503

Soil Descriptions

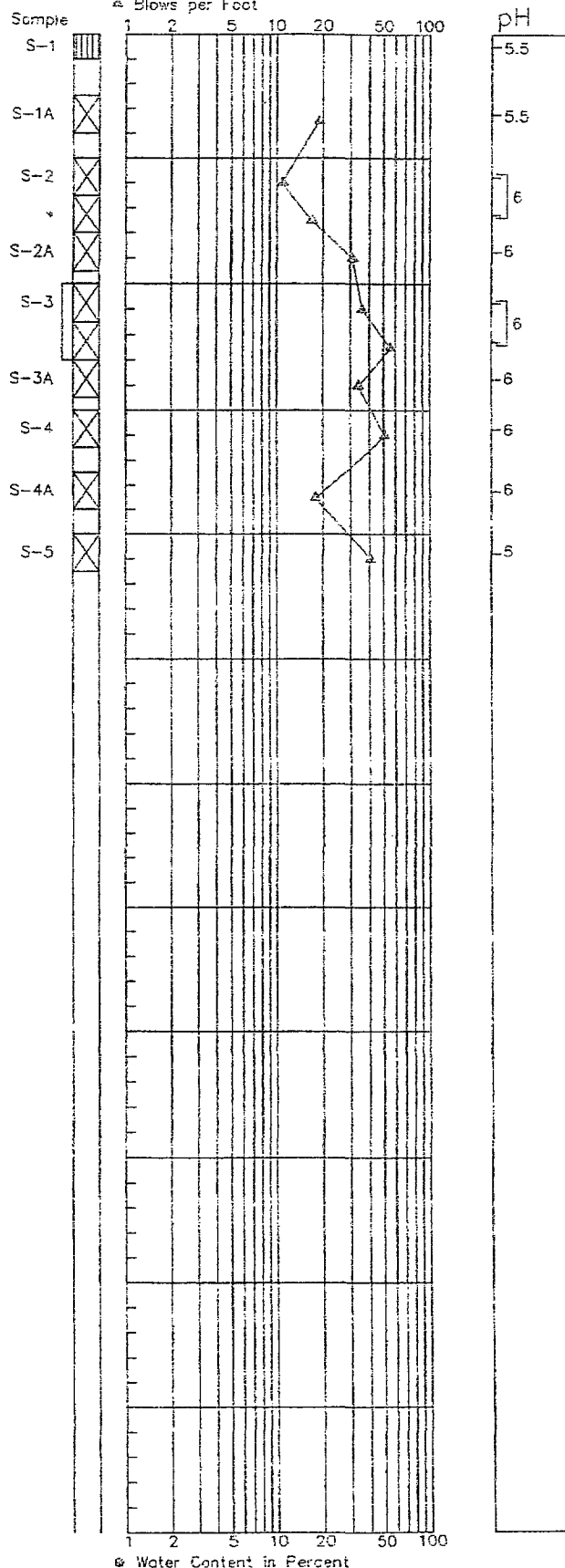
Ground Surface Elevation in Feet 215.1

(Loose), moist, black, silty, gravelly, fine to medium SAND.	0
Medium dense to dense, moist, light brown, sandy GRAVEL.	5
Dense, moist, dark brown, very sandy gravel.	10
Medium dense to very dense, moist, light brown green, sandy GRAVEL.	15
Grades to wet, slightly sandy GRAVEL.	20
Bottom of Boring at 21.5 Feet. Completed 2/19/92.	21.5
	25
	30
	35
	40
	45
	50
	55
	60

Depth
in Feet

ATD

STANDARD PENETRATION RESISTANCE



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Boring Log 37-B-504

Soil Descriptions

Ground Surface Elevation in Feet 211.2

(Loose), black, silty, gravelly, medium to fine SAND.

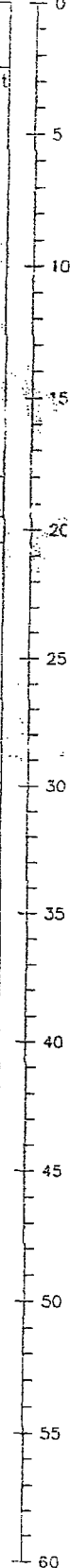
Medium dense to dense, moist, brown to light brown, very to slightly sandy GRAVEL.

Dense, wet, brown, slightly silty, slightly sandy GRAVEL.

Very dense, wet, gray brown, slightly sandy GRAVEL.

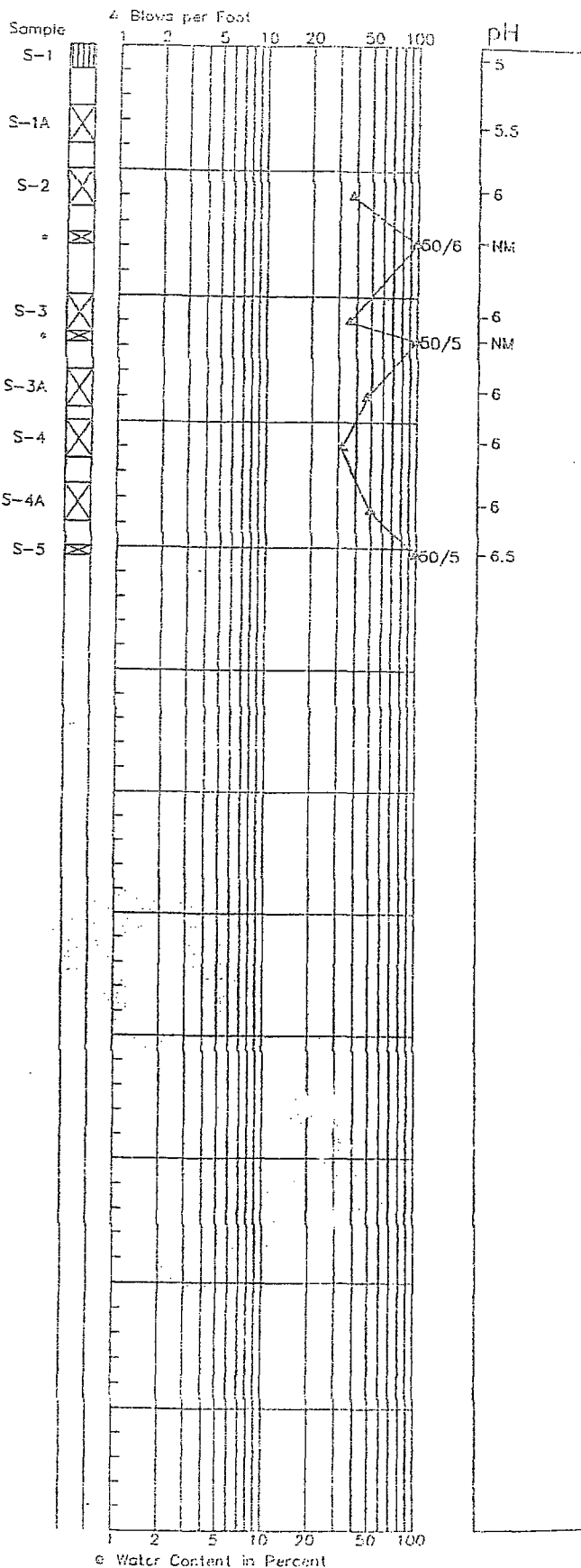
Bottom of Boring at 20.5 Feet.
Completed 2/20/92.

Depth
in Feet



ATD

STANDARD PENETRATION RESISTANCE



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Log of Test Pit 31-TP-501

Ground Surface Elevation Approximately 212.3 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	4	0 to 0.8	(Medium dense), damp to moist, dark brown, silty, gravelly SAND with brick fragments, metal debris, burnt wood, and glass.
			0.8 to 2.1	(Dense), damp to moist, black, slightly silty, sandy GRAVEL with abundant roots and other organics.
S-2	3 to 6	6	2.1 to 10	(Dense), damp to moist, brown to tan, sandy GRAVEL.
S-3	8 to 10	6		

Bottom of 31-TP-501 at 10 feet, completed 2/26/92.

Log of Test Pit 31-TP-502

Ground Surface Elevation Approximately 215.8 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Medium dense), damp, black, silty, sandy GRAVEL with roots and debris (sardine cans).
S-2	3 to 6	5.5	2 to 4.5	(Dense), damp, tan-brown, slightly gravelly to gravelly SAND.
S-3	8 to 10	6.0	4.5 to 10	(Very dense), moist, tan to brown-gray, sandy GRAVEL with cobbles up to 6 inches in diameter. Soil becomes more moist and less dense, below 6 feet.

Bottom of 31-TP-502 at 10 feet, completed 2/26/92.

Log of Test Pit 31-TP-503

Ground Surface Elevation Approximately 210.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4	0 to 2	(Medium dense), moist, black, slightly gravelly, silty SAND with abundant roots.
S-2	3 to 6	5.5	2 to 4.5	(Medium dense), moist, tan-brown, very sandy GRAVEL.
S-3	8 to 10	5	4.5 to 10	(Dense), moist, tan-brown, sandy GRAVEL with cobbles up to 7 inches in diameter.

Bottom of 31-TP-503 at 10 feet, completed 2/27/92.

Log of Test Pit 31-TP-504

Ground Surface Elevation Approximately 212.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 1.5	Grass over (medium dense), damp to moist, black, slightly gravelly, silty SAND with roots and other organics.
S-2	3 to 6	5	1.5 to 4	(Medium dense), moist, tan-brown, sandy GRAVEL with a lens of dark brown sand at depth of 2 feet.
S-3	8 to 10	5	4 to 10	(Medium dense), moist, brownish gray, sandy GRAVEL with cobbles up to 8 inches in diameter.

Bottom of 31-TP-504 at 10 feet, completed 2/26/92.

Log of Test Pit 31-TP-505

Ground Surface Elevation Approximately 214.3 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet*	Soil Description
S-1	0 to 1	4	0 to 2	(Medium dense), moist, black, sandy, silty GRAVEL with roots and an old log from depth of 0.5 to 1.5 feet.
S-2	3 to 6	5.5	2 to 7	(Medium dense), moist, tan-brown, sandy GRAVEL.
S-3	9 to 11	5.5	7 to 10.5	(Medium dense), moist, gray, gravelly SAND.
			10.5 to 11	(Medium dense), moist, orange-brown (iron-stained), slightly silty SAND with occasional roots.

Bottom of 31-TP-505 at 11 feet, completed 2/27/92.

Figure A-31-8

Log of Test Pit 31-TP-506

Ground Surface Elevation Approximately 211.8 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 2	(Medium dense), moist, black, silty, sandy GRAVEL with roots and trace organics.
S-2	3 to 6	5	2 to 4	(Medium dense), moist, tan-brown, sandy GRAVEL.
			4 to 4.8	(Medium dense), moist, tan-brown, gravelly SAND with roots.
S-3	8 to 10	5	4.8 to 10	(Dense), moist, gray, sandy GRAVEL with cobbles up to 6 inches in diameter.

Bottom of 31-TP-506 at 10 feet, completed 2/27/92.

Log of Test Pit 31-TP-507

Ground Surface Elevation Approximately 211.0 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4	0 to 2	(Medium dense), moist, black, silty, gravelly SAND with roots and chunks of old logs.
S-2	3 to 6	5.5	2 to 4.5	(Medium dense), moist, tan, sandy GRAVEL with minor root fragments.
S-3	8 to 10	5	4.5 to 10	(Medium dense to dense), moist, gray, sandy GRAVEL with cobbles up to 8 inches in diameter. Becomes more moist and less sandy below a depth of 7 feet.

Bottom of 31-TP-507 at 10 feet, completed 2/27/92.

Log of Test Pit 31-TP-508

Ground Surface Elevation Approximately 209.0 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	0 to 3	(Medium dense), moist, medium brown, slightly gravelly, silty SAND with abundant small roots.
S-2	3 to 6	3 to 8	6 inches of black, silty SAND over (medium dense) moist, gray, slightly sandy GRAVEL with large roots and glass fragments.
S-3	8 to 10	8 to 10	(Medium dense), damp, gray, slightly sandy GRAVEL.

Bottom of 31-TP-508 at 10 feet, completed 2/24/92.

Log of Test Pit 31-TP-509

Ground Surface Elevation Approximately 209.3 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.5	(Medium dense), moist, black, sandy, silty GRAVEL with roots and an old log from depth of 0.5 to 1.5 feet.
S-2	3 to 6	5.5	1.5 to 10	(Medium dense to dense), moist, brownish gray, sandy GRAVEL with cobbles to 7 inches and abundant thin lenses of fine gravel.
S-3	8 to 10	5		

Bottom of 31-TP-509 at 10 feet, completed 2/27/92.

Figure A-31-10

Log of Hand Auger Boring 31-HA-501

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 3	(Medium dense), moist, dark brown to brown, slightly silty, sandy GRAVEL with organics in upper one foot.
S-2	2 to 3		

Bottom of 31-HA-501 at 3 feet, completed 11/3/92.

Log of Hand Auger Boring 31-HA-502

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 3	(Medium dense), moist, dark brown to brown, silty to slightly silty, sandy GRAVEL with minor organics.
S-2	2 to 3		

Bottom of 31-HA-502 at 3 feet, completed 11/3/92.

AREA 38
EXPLORATION LOGS

Boring Log 38-B-501

Soil Descriptions

Ground Surface Elevation in Feet 206.5

Drywell (open hole to 7 feet)

Medium dense, wet to moist, gray, slightly gravelly, very sandy SILT (fill) with sulfur-like odor.

Medium dense, moist to wet, brown, slightly silty, slightly sandy GRAVEL.

Dense, wet to moist, brown, slightly sandy GRAVEL.

Medium dense, moist to wet, slightly silty, slightly sandy GRAVEL.

Bottom of Boring at 23.0 Feet.
Completed 3/25/92.

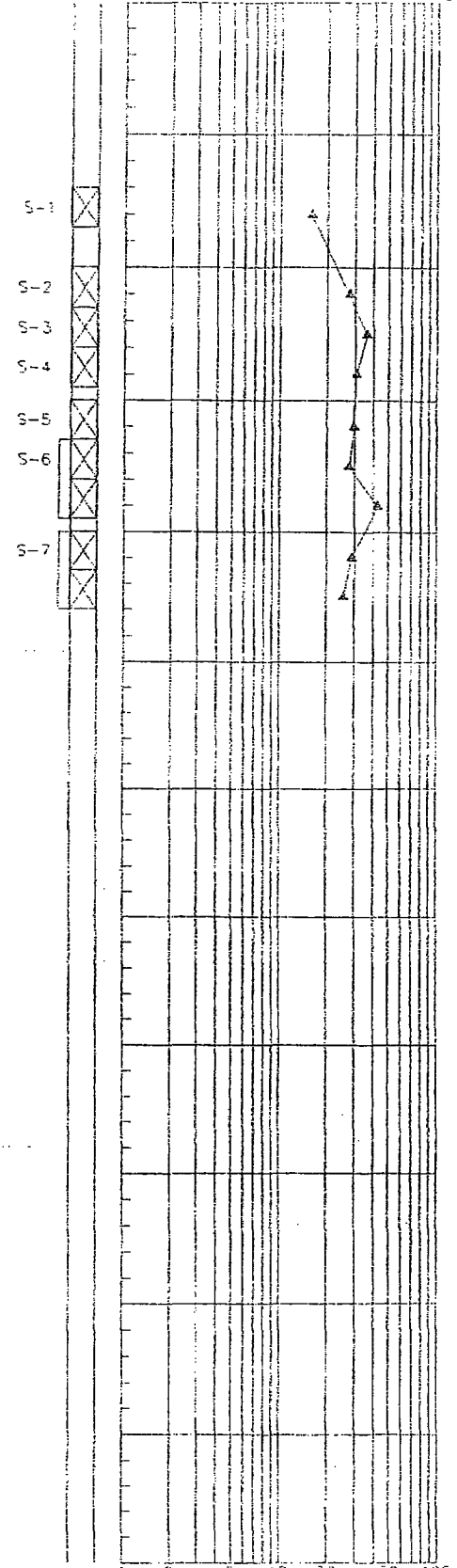
Note: Boring completed within 3-foot square drywell with wood-lined walls.

Depth
in Feet

0
5
10
15
20
25
30
35
40
45
50
55
60

STANDARD PENETRATION RESISTANCE

Sample Blows per foot



pH/PID



Water Content in Percent

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

*Log of Test Pit 38-TP-501

Ground Surface Elevation Approximately 213.5 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 0.5	(Loose), damp, black, silty, sandy GRAVEL with red flakes of paint on surface.
S-2	2 to 4	5	0.5 to 6	(Loose), moist, gray and dark brown, silty, gravelly SAND with potential asbestos-containing material and debris (see notes below) inside of old trench (FILL). Adjacent to both sides of trench is (medium dense), moist, brown, sandy GRAVEL (NATIVE).
S-3	4 to 6	4.5		
S-4	6 to 8	5.5	6 to 8	(Medium dense), moist, gray, sandy GRAVEL.
S-5	8 to 10	5.5	8 to 10	(Dense), moist, brown, slightly silty GRAVEL

Bottom of 38-TP-501 at 10 feet, completed 4/21/92.

Notes:

- 1) Encountered potential asbestos-containing material from depth of 3 to 6 feet, which was removed by TLH Abatement, Inc.
- 2) An abandoned trench was filled in with soil from depth of 0 to 6 feet. The trench fill contained wood debris (old gutter?), copper wire, and a 3/4-inch-diameter water line.

Log of Hand Auger Boring 38-HA-502

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 3	(Medium dense), moist, dark brown, silty, sandy GRAVEL with organics.
S-2	2 to 3		

Bottom of 38-HA-502 at 3 feet, completed 10/30/92.

Log of Hand Auger Boring 38-HA-503

Sample Number	Sample Depth in Feet	Stratum Depth in Feet*	Soil Description
S-1	0 to 1	0 to 3	(Medium dense), damp to moist, brown to dark brown, silty, sandy GRAVEL with organics.
S-2	2 to 3		

Bottom of 38-HA-503 at 3 feet, completed 10/30/92.

Figure A-38-3

AREA 40
EXPLORATION LOGS

Log of Test Pit 40-CR-TP-501

Ground Surface Elevation Approximately 211.0 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.7	(Loose), damp, black, silty, very sandy GRAVEL.
S-2	1 to 1.7	5		
S-3	1.7 to 3	6	1.7 to 3	(Loose), damp, brown, sandy GRAVEL.
S-4	3 to 5	6	3 to 5	(Medium dense), moist, light gray, sandy GRAVEL.

Bottom of 40-CR-TP-501 at 5 feet, completed 4/3/92

Log of Test Pit 40-CR-TP-502

Ground Surface Elevation Approximately 209.8 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 1	(Loose), moist, medium brown, sandy GRAVEL.
S-2	1 to 2	4	1 to 2	(Loose), moist, medium gray, sandy GRAVEL with (medium dense), tan-brown GRAVEL lenses at depths of 5 and 6 feet.
S-3	2 to 3	5	2 to 5	(Loose), damp, light brown, sandy GRAVEL.
S-4	3 to 5	5		

Bottom of 40-CR-TP-502 at 5 feet, completed 4/3/92

Figure A-40-1

Log of Test Pit 40-CR-TP-503

Ground Surface Elevation Approximately 212.5 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 5.5	3 inches of (dense), damp, dark brown, silty, sandy GRAVEL over (dense), damp, interbedded black and brown, silty, sandy GRAVEL (FILL).
S-2	1 to 2	4		
S-3	2 to 3	4		
S-4	3 to 5	4	5.5 to 6	(Medium dense), damp, brown, sandy GRAVEL (NATIVE).

Bottom of 40-CR-TP-503 at 6 feet, completed 4/3/92.

Note:

Test pit located on abandoned railroad grade.

Log of Test Pit 40-CR-TP-504

Ground Surface Elevation Approximately 211.1 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Loose), damp, black, silty, sandy GRAVEL.
S-2	1 to 2	5	1 to 2	(Medium dense), damp, brown, silty, sandy GRAVEL.
S-3	2 to 3	5	2 to 5	(Medium dense), damp, light brown, sandy GRAVEL.
S-4	3 to 5	5		

Bottom of 40-CR-TP-504 at 5 feet, completed 4/3/92.

Log of Test Pit 40-CR-TP-505

Ground Surface Elevation Approximately 211.1 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4	0 to 2	(Loose), damp, black, silty, sandy GRAVEL.
S-2	1 to 2	4		
S-3	2 to 3	4	2 to 3	(Medium dense) damp, brown, silty, sandy GRAVEL.
S-4	3 to 5	5	3 to 5	(Medium dense), damp, light brown, sandy GRAVEL.

Bottom of 40-CR-TP-505 at 5 feet, completed 4/3/92

Log of Test Pit 40-CR-TP-506

Ground Surface Elevation Approximately 210.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Medium dense), damp, black, silty, sandy GRAVEL.
S-2	1 to 2	5		
S-3	2 to 3	5	2 to 3	(Medium dense), damp, dark brown, silty, sandy GRAVEL.
S-4	3 to 5	6	3 to 6.5	(Loose), damp, light brown GRAVEL.
S-5	8 to 10	5	6.5 to 10	(Loose), damp dark gray, slightly sandy GRAVEL with boulders.

Bottom of 40-CR-TP-506 at 10 feet, completed 4/3/92

Note:

Abundant metal debris removed from surface prior to excavation.

Figure A-40-3

Log of Test Pit 40-GM-TP-501

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 5	Six inches of dark brown TOPSOIL over (medium dense), moist, yellow-brown, slightly silty, sandy GRAVEL with gravel content increasing with depth. Standing water encountered at depth of 2.5 feet.
S-2	3 to 5	6		

Bottom of 40-GM-TP-501 at 5 feet, completed 2/18/92.

Note:

Test pit located in depression below site of former Glaze Mill No. 2.

Log of Test Pit 40-GM-TP-502

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	Six inches of dark brown, very organic TOPSOIL over (medium stiff), moist, yellow-brown, sandy SILT with iron staining and roots.
S-2	3 to 5	6	1 to 5	(Medium dense), moist to wet, yellow-brown, slightly silty, sandy GRAVEL with some boulders. Standing water encountered at depth of 3 feet.

Bottom of 40-GM-TP-502 at 5 feet, completed 2/18/92.

Note:

Water encountered at depth of 3 feet, could not bail out with backhoe.

Log of Test Pit 40-GM-TP-503

Ground Surface Elevation Approximately 198.6 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	6	0 to 1	(Loose), moist, dark brown, gravelly, very silty SAND with abundant roots and other organics.
			2.5 to 3	(Medium stiff), moist, yellow-brown, slightly gravelly, silty CLAY.
S-2	3 to 5	6	3 to 5	(Medium dense), moist to wet, yellow-brown, silty, sandy GRAVEL with gravel content increasing with depth. Water encountered at depth of 4 feet.

Bottom of 40-CR-TP-503 at 5 feet, completed 2/18/92

Note:

Rapid seepage of water encountered at depth of 4 feet.

Figure A-40-5

Log of Test Pit 40-GM-TP-504

Ground Surface Elevation Approximately 202.4 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	6	0 to 3	(Loose), damp, dark brown, silty, sandy GRAVEL with abundant organics (wood and roots).
S-2	3 to 5	5.5	3 to 7	(Medium dense), damp, yellow-brown, slightly silty, sandy GRAVEL with small roots.
S-3	5.5 to 6.5	6	7 to 10	(Medium dense), moist to wet, yellow-brown GRAVEL.

Bottom of 40-GM-TP-504 at 10 feet, completed 2/19/92.

Notes:

- 1) No standing water but GRAVEL was wet from depth of 9 to 10 feet.
- 2) Could not sample at depth of 8 to 10 feet because of sloughing of test pit walls.

Log of Test Pit 40-GM-TP-505

Ground Surface Elevation Approximately 215.1 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.8	(Loose), damp, dark brown, gravelly, very silty SAND with abundant roots.
S-2	3 to 5	6	1.8 to 5	(Medium dense), damp, yellow-brown, sandy GRAVEL with less sand content with depth and minor roots.

Bottom of 40-GM-TP-505 at 5 feet, completed 2/19/92

Log of Test Pit 40-GM-TP-506

Ground Surface Elevation Approximately 216.0 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5.5	0 to 2.5	(Loose), damp, dark brown, silty SAND with abundant roots (FILL?).
			2.5 to 3	(Medium dense), damp, yellow-brown, sandy GRAVEL (FILL?).
S-2	3 to 5	5.5	3 to 5	(Loose), damp, dark brown, gravelly, very silty SAND with roots.

Bottom of 40-GM-TP-506 at 5 feet, completed 2/19/92

Note:

Root horizons above and below depth of 3 feet suggests more than one fill episode.

Figure A-40-7

Log of Test Pit 40-GM-TP-507

Ground Surface Elevation Approximately 198.8 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Loose), damp, dark brown, gravelly, very silty SAND with roots.
S-2	2.5 to 4.5	6	3 to 5	(Medium dense), moist to wet, yellow-brown, sandy GRAVEL. Water encountered at depth of 4.5 feet.

Bottom of 40-GM-TP-507 at 5 feet, completed 2/19/92.

Log of Test Pit 40-MH-TP-501

Ground Surface Elevation Approximately 214.6 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Loose), damp, black, silty, sandy GRAVEL.
S-2	1 to 2	5		
S-3	2 to 3	4.5	2 to 5	(Medium dense), damp, light brown, sandy GRAVEL.
S-4	3 to 5	4.5		

Bottom of 40-MH-TP-501 at 5 feet, completed 4/1/92.

Log of Test Pit 40-MH-TP-502

Ground Surface Elevation Approximately 212.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	1 inch of moss over (medium dense), moist, black, slightly silty, sandy GRAVEL with abundant roots.
S-2	1 to 1.5	5		
S-3	1.5 to 2	5		
S-4	2 to 2.5	6	2 to 2.5	(Medium dense), moist, tan-brown, sandy GRAVEL.
S-5	2.5 to 3	5.5	2.5 to 5	(Medium dense), moist to wet, medium gray, sandy GRAVEL.
S-6	3 to 5	5.5		

Bottom of 40-MH-TP-502 at 5 feet, completed 4/2/92

Log of Test Pit 40-MH-TP-503

Ground Surface Elevation Approximately 208.5 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2.5	(Loose), moist, black, slightly silty, sandy GRAVEL with abundant roots.
S-2	1 to 2	5		
S-3	2.5 to 3	6	2.5 to 5	(Loose), moist, tan-brown, slightly sandy, pea-size GRAVEL.
S-4	3 to 5	6		

Bottom of 40-MH-TP-503 at 5 feet, completed 4/2/92

Figure A-40-9

Log of Test Pit 40-MH-TP-504

Ground Surface Elevation Approximately 213.9 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 2	(Medium dense), moist, black, slightly silty, sandy GRAVEL with abundant roots.
S-2	1 to 1.5	5		
S-3	1.5 to 2	5		
S-4	2 to 2.5	6	2 to 2.5	(Medium dense), moist, tan-brown, sandy GRAVEL).
S-5	2.5 to 3	6	2.5 to 6.5	(Medium dense), moist, medium gray, sandy GRAVEL with cobbles. Moisture increases with depth.
S-6	3 to 5	6		
			6.5 to 7.5	(Loose), wet, sandy, pea-size GRAVEL.
S-7	8 to 10	6	7.5 to 10	(Medium dense), wet, medium gray, sandy GRAVEL.

Bottom of 40-MH-TP-504 at 10 feet, completed 4/2/92.

Log of Test Pit 40-MH-TP-505

Ground Surface Elevation Approximately 213.5 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.5	Forest Duff, wood, metal debris, and concrete blocks over (medium dense), moist, black, slightly silty, sandy GRAVEL with roots.
S-2	1 to 1.5	5		
S-3	1.5 to 2	5	1.5 to 2	(Medium dense), moist, tan-brown, sandy GRAVEL.
S-4	2 to 2.5	5	2 to 8	(Medium dense) moist, medium gray, sandy GRAVEL.
S-5	2.5 to 3	5		
S-6	3 to 5	5		
S-7	8 to 10	4.5	8 to 10	(Loose), moist, gray, slightly gravelly SAND.

Bottom of 40-MH-TP-505 at 10 feet, completed 4/2/92

Figure A-40-11

Log of Test Pit 40-MH-TP-506

Ground Surface Elevation Approximately 213.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.5	(Loose), damp, black, silty, sandy GRAVEL.
S-2	1 to 1.5	5		
S-3	1.5 to 2	5	1.5 to 5	(Loose), damp, light brown, sandy GRAVEL.
S-4	2 to 2.5	5		
S-5	2.5 to 3	5		
S-6	3 to 5	5		

Bottom of 40-MH-TP-506 at 5 feet, completed 4/2/92.

Log of Test Pit 40-MH-TP-507

Ground Surface Elevation Approximately 214.3 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Loose), damp, black, silty, very sandy GRAVEL.
S-2	1 to 2	4.5		
S-3	2 to 3	4.5	2 to 3	(Medium dense), damp, gray, sandy GRAVEL.
S-4	3 to 5	5	3 to 5	(Medium dense), damp, brown, sandy GRAVEL.

Bottom of 40-MH-TP-507 at 5 feet, completed 4/2/92.

Log of Test Pit 40-MH-TP-508

Ground Surface Elevation Approximately 214.2 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Loose), damp, dark brown, silty, very sandy GRAVEL.
S-2	1 to 2	5		
S-3	2 to 3	5	2 to 5	(Medium dense), damp, light brown, sandy GRAVEL.
S-4	3 to 5	5		

Bottom of 40-MH-TP-508 at 5 feet, completed 4/2/92

Log of Test Pit 40-PH-TP-501

Ground Surface Elevation Approximately 205.6 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 2	(Loose), moist, dark brown, silty, gravelly SAND.
		2 to 3	(Medium dense), damp, greenish gray, sandy GRAVEL. Sand is primarily coarse-grained with little silt.
S-2	3 to 5	3 to 5	(Medium dense), damp, yellow-brown, slightly silty, sandy GRAVEL with minor roots.
		5 to 6	(Medium dense), damp, yellow-brown, gravelly SAND.
S-3	8 to 10	6 to 10	(Medium dense), moist to wet, yellow-brown, very sandy GRAVEL.

Bottom of 40 PH-TP-501 at 10 feet, completed 2/20/92

Figure A-40-13

Log of Test Pit 40-PH-TP-502

Ground Surface Elevation Approximately 209.8 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 2	(Loose), moist, dark brown, gravelly, silty SAND and organics.
S-2	3 to 5	2 to 5	(Medium dense), damp, yellow-brown, sandy GRAVEL with abundant rounded cobbles.

Bottom of 40-PH-TP-502 at 5 feet, completed 2/20/92.

Log of Test Pit 40-PH-TP-503

Ground Surface Elevation Approximately 210.9 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	0 to 1.5	(Loose), moist, dark brown, gravelly, silty SAND with organics (roots).
S-2	3 to 5	1.5 to 5	(Medium dense), damp, yellow-brown, sandy GRAVEL with a few small roots.

Bottom of 40-PH-TP-503 at 5 feet, completed 2/20/92.

Log of Test Pit 40-PH-TP-504

Ground Surface Elevation Approximately 211.2 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	0 to 1.5	(Loose), moist, dark brown, gravelly, silty SAND with organics (roots).
S-2	3 to 5	1.5 to 5	(Medium dense), damp, yellow-brown, sandy GRAVEL with small roots.

Bottom of 40 PH-TP-504 at 5 feet, completed 2/20/92

Log of Test Pit 40-PH-TP-505

Ground Surface Elevation Approximately 211.6 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 1.5	(Loose), moist, dark brown, gravelly, silty SAND with organics (roots).
		1.5 to 3	(Medium dense), damp, yellow-brown, sandy GRAVEL with a 4-inch-thick lens of pea-size gravel at depth of 2.5 feet.
S-2	3 to 5	3 to 5	(Medium dense), damp, greenish gray, sandy GRAVEL.

Bottom of 40 PH-TP-505 at 5 feet, completed 2/20/92

Figure A-40-15

Log of Test Pit 40-PR-TP-501

Ground Surface Elevation Approximately 211.3 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Loose), damp, black, silty, very sandy GRAVEL with sand lenses and roots.
S-2	1 to 2	5	2 to 5	(Medium dense), damp, light brown, sandy GRAVEL.
S-3	2 to 3	5.5		
S-4	3 to 5	5.5		

Bottom of 40-PR-TP-501 at 5 feet, completed 4/1/92.

Log of Test Pit 40-PR-TP-502

Ground Surface Elevation Approximately 210.4 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4	0 to 2	(Loose), damp, black, slightly gravelly, silty, fine SAND.
S-2	1 to 2	4		
S-3	2 to 3	4	2 to 3	(Loose), damp, brown, silty, fine SAND.
S-4	3 to 5	4.5	3 to 5	(Medium dense), damp, light brown, gravelly, medium to fine SAND.

Bottom of 40-PR-TP-502 at 5 feet, completed 4/1/92.

Log of Test Pit 40-PR-TP-503

Ground Surface Elevation Approximately 209.0 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	5	0 to 2	(Loose), damp, black, silty, sandy GRAVEL with roots.
S-2	1 to 2	5		
S-3	2 to 3	5.5	2 to 3	(Medium dense), damp, Dark brown, silty, sandy GRAVEL.
S-4	3 to 5	4.5	3 to 10	(Medium dense), damp, light brown, sandy GRAVEL.
S-5	8 to 10	4		

Bottom of 40-PR-TP-503 at 10 feet, completed 4/1/92

Log of Test Pit 40-PR-TP-504

Ground Surface Elevation Approximately 212.2 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Loose), damp, silty, very sandy GRAVEL with roots.
S-2	1 to 2	5		
S-3	2 to 3	5	2 to 5	(Medium dense), damp, light brown, sandy GRAVEL.
S-4	3 to 5	5		

Bottom of 40-PR-TP-504 at 5 feet, completed 4/1/92

Figure A-40-17

Log of Test Pit 40-PR-TP-505

Ground Surface Elevation Approximately 214.4 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4	0 to 0.3	(Loose), damp, black, silty, sandy GRAVEL.
S-2	1 to 2	4	0.3 to 3.5	(Loose), damp, brown, sandy GRAVEL intermixed with black, silty, sandy GRAVEL.
S-3	2 to 3	4		
S-4	4 to 5	4	3.5 to 5	(Loose), damp, dark brown, silty, gravelly SAND (NATIVE).

Bottom of 40-PR-TP-505 at 5 feet, completed 4/1/92.

Note:

Test pit located on old railroad grade. The fill/native soil contacts were difficult to locate because of native soils used as fill in building the grade.

Log of Hand Auger Boring 40-PR-HA-501

Ground Surface Elevation Approximately 209.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
--	--	--	0 to 3.5	Empty, wood-lined drywell 3.5 feet deep by 4 feet wide.
S-1(R)	3.5 to 4	5	3.5 to 7.5	(Loose), moist, black, slightly gravelly, silty SAND with twigs and small pieces of wood. Numerous wood chunks, fir needles, and twigs from depth of 5 to 7 feet. A few weathered rocks at depth of 7 feet.
S-2(R)	4 to 4.5	4.5		
S-3(R)	4.5 to 5	4.5		
S-4(R)	5 to 5.5	4.5		
S-5(R)	5.5 to 6	4		
S-6(R)	6 to 6.5	4		
S-7(R)	6.5 to 7	4.5		
S-8(R)	7 to 7.5	3.5		
S-9(R)	7.5 to 8	3	7.5 to 8.3	(Loose), wet, black, slightly gravelly, silty SAND with residual petroleum, slight petroleum odor.
S-10(R)	8 to 8.3	3	8.3 to 9	(Loose), moist, silver-gray SAND.
S-11(R)	8.3 to 9	1		
S-12(R)	9 to 9.5	1	9 to 10.5	(Loose), moist, gold-yellow SAND.
S-13 (R)	9.5 to 10	1		
S-14(R)	10 to 10.5	1		

Bottom of 40-PR-HA-501 at 10.5 feet, completed 4/9/92

Note:

Hand Auger drilled in bottom of drywell.

Figure A-40-19

Log of Test Pit 40-PU-TP-501

Ground Surface Elevation Approximately 199.0 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1(R)	0 to 1	7	0 to 1	(Medium dense), moist, black, slightly silty, sandy GRAVEL with metal debris, old lumber, and apparent dried white paint.
S-2	1 to 1.5	6	1 to 2	(Medium dense), moist, orange-brown, sandy GRAVEL.
S-3	1.5 to 2	6		
S-4	2 to 2.5	6	2 to 3	(Medium dense), moist, tan-brown, medium sandy GRAVEL.
S-5	2.5 to 3	6		
S-6	3 to 5	6	3 to 4.5	(Medium dense), moist to wet, medium gray, coarse sandy GRAVEL.
S-7	8 to 10	6	4.5 to 10	(Medium dense), moist to wet, tan-brown, medium sandy GRAVEL with a few small gravel layers.

Bottom of 40-PU-TP-501 at 10 feet, completed 4/6/92.

Log of Test Pit 40-PU-TP-502

Ground Surface Elevation Approximately 195 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Loose), moist, medium brown, slightly silty, very gravelly SAND with abundant roots.
S-2	1 to 2	5		
S-3	2 to 3	5.5	2 to 3	(Loose), moist, light brown, slightly silty, very gravelly SAND with minor roots.
S-4	3 to 5	6	3 to 5	(Loose), moist, tan-brown, sandy GRAVEL.

Bottom of 40-PU-TP-502 at 5 feet, completed 4/6/92

Log of Test Pit 40-PU-TP-503

Ground Surface Elevation Approximately 205.9 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 5	(Loose), moist, dark brown, slightly silty, sandy GRAVEL with roots to a depth of 2.5 feet.
S-2	1 to 1.5	5		
S-3	1.5 to 2	5		
S-4	2 to 2.5	5		
S-5	2.5 to 3	5		
S-6	3 to 5	5		

Bottom of 40-PU-TP-503 at 5 feet, completed 4/6/92

Figure A-40-21

Log of Test Pit 40-PU-TP-504

Ground Surface Elevation Approximately 208.5 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Loose), moist, dark brown, slightly silty, sandy GRAVEL with abundant roots.
S-2	1 to 2	5		
S-3	2 to 2.7	5	2 to 2.7	(Loose), moist, medium brown, sandy GRAVEL with occasional roots.
S-4	3 to 5	6	2.7 to 5	(Loose), moist, medium gray, sandy GRAVEL with areas of brown staining.

Bottom of 40-PU-TP-504 at 5 feet, completed 4/6/92.

Log of Test Pit 40-PU-TP-505

Ground Surface Elevation Approximately 209.8 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Loose), moist, dark brown to black, slightly silty, sandy GRAVEL with abundant roots.
S-2	1 to 2	5		
S-3	2 to 3	6	2 to 5	(Loose), moist, tan-brown, sandy GRAVEL.
S-4	3 to 5	6		

Bottom of 40-PU-TP-505 at 5 feet, completed 4/6/92.

Log of Test Pit 40-PU-TP-506

Ground Surface Elevation Approximately 197.6 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5.5	0 to 2	(Loose), moist, dark brown, slightly silty, sandy GRAVEL with broken glass from depth of 0 to 0.5 foot.
S-2	1 to 2	6		
S-3	2 to 3	6	2 to 4	(Loose), moist, light brown, sandy GRAVEL.
S-4	3 to 5	6	4 to 5	(Loose), moist, light gray-tan, very sandy GRAVEL.

Bottom of 40-PU-TP-506 at 5 feet, completed 4/6/92

Figure A-40-23

Log of Test Pit 40-WM1-TP-501

Ground Surface Elevation Approximately 207.1 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 0.5	(Medium dense), moist, black, silty, sandy GRAVEL with roots.
			0.5 to 2	(Medium dense), moist, tan-brown, sandy GRAVEL with roots.
S-2	3 to 5	5	2 to 6	(Medium dense to dense), moist, brownish gray, very sandy GRAVEL with 2 blocks of cement (1 foot square) at depth of 2 feet.
S-3	8 to 10	5	6 to 10	(Medium dense), moist, gray, gravelly SAND.
			10 to 10.5	(Medium dense to dense), moist, gray, sandy GRAVEL.

Bottom of 40-WM1-TP-501 at 10.5 feet, completed 2/28/92.

Notes:

- 1) Test pit excavated adjacent to foundation.
- 2) Bottom of foundation observed at depth of 7.5 feet.
- 3) Apparent fill material observed within approximately 2 feet away from foundation.

Log of Test Pit 40-WM1-TP-502

Ground Surface Elevation Approximately 208.3 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Medium dense), moist, black, silty, sandy GRAVEL with roots and other organics.
			1 to 3	(Medium dense), moist, orange-brown, sandy GRAVEL with roots and gravel to 4 inches in diameter.
S-2	3 to 5	4.5	3 to 5	(Medium dense), moist, brownish gray, sandy GRAVEL.

Bottom of 40-WM1-TP-502 at 5 feet, completed 2/28/92

Log of Test Pit 40-WM1-TP-503

Ground Surface Elevation Approximately 206.8 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 1.5	(Loose), damp, silty, very sandy GRAVEL with roots.
S-2	3 to 5	5	1.5 to 5	(Medium dense), moist, tan-gray, sandy GRAVEL.

Bottom of 40-WM1-TP-503 at 5 feet, completed 2/28/92

Figure A-40-25

Log of Test Pit 40-WM1-TP-504

Ground Surface Elevation Approximately 205.6 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 2.5	(Medium dense), moist, black, silty, very sandy GRAVEL with roots and organic debris.
			2.5 to 3.5	(Medium dense to dense), moist, tan-brown, slightly sandy GRAVEL.
S-2	3 to 5	5.5	3.5 to 5	(Medium dense), moist, brownish gray, sandy GRAVEL.

Bottom of 40-WM1-TP-504 at 5 feet, completed 2/28/92.

Log of Test Pit 40-WM1-TP-505

Ground Surface Elevation Approximately 207.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 1.5	(Medium dense), moist, dark brown to black, silty, sandy GRAVEL with abundant roots.
S-2	3 to 5	5.5	1.5 to 5	(Medium dense), moist, brownish gray, sandy GRAVEL with occasional roots.

Bottom of 40-WM1-TP-505 at 5 feet, completed 2/28/92.

Log of Hand Auger Boring 40-WM1-HA-501

Ground Surface Elevation Approximately 198.1 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5.5	0 to 0.5 (outside drywell)	(Loose),moist, black, slightly gravelly, silty SAND with roots.
			0 to 4	Empty, wood-lined drywell 4 feet deep by 1.5 feet wide by 3 feet long.
S-2	4 to 4.5	5	4 to 4.5	Forest Duff over (medium dense), moist, medium brown, sandy GRAVEL with layer of wood at depth of 4.3 feet (old wood floor?).
S-3(R)	4.5 to 5	5.5	4.5 to 5	(Medium soft), moist to wet, black, gravelly, very sandy SILT.
S-4(R)	5 to 5.5	5	5 to 5.5	(Medium dense), moist, medium brown, sandy GRAVEL.

Bottom of 40-WM1-HA-501 at 5.5 feet, completed 3/31/92

Notes:

- 1) Hand auger dug in abandoned drywell.
- 2) Sample S-1 collected from soil around edge of drywell opening. Samples S-2 through S-4 collected beneath bottom of drywell bottom (4 feet below grade).
- 3) Observed hollow steel pipe coming from Wheel Mill foundation and going into drywell.

Figure A-40-27

Log of Test Pit 40-WM2-TP-501

Ground Surface Elevation Approximately 206.5 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1(R)	5	0 to 1.2	(Loose), moist, black, gravelly, silty SAND with rusted scrap metal and wood (old roof?).
S-2	3 to 6	5	1.2 to 10	(Medium dense), moist, light brown, sandy GRAVEL with cobbles up to 4 inches in diameter.
S-3	8 to 9.5	5		

Bottom of 40-WM2-TP-501 at 9.5 feet, completed 3/2/92.

Log of Test Pit 40-WM2-TP-502

Ground Surface Elevation Approximately 205.4 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Loose), moist, black, silty, gravelly SAND with roots.
			2 to 3.5	(Medium dense), moist, dark brown, sandy GRAVEL.
S-3	3 to 5	5	3.5 to 5	(Medium dense), moist, light brown, sandy GRAVEL.

Bottom of 40-WM2-TP-502 at 5 feet, completed 3/2/92.

Log of Test Pit 40-WM2-TP-503

Ground Surface Elevation Approximately 210.2 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Loose), moist, black, silty, gravelly SAND with roots.
			2 to 3	(Medium dense), moist, dark brown, sandy GRAVEL.
S-2	3 to 5	5	3 to 5	(Dense), moist, light brown, sandy GRAVEL.

Bottom of 40-WM2-TP-503 at 5 feet, completed 3/2/92

Log of Test Pit 40-WM2-TP-504

Ground Surface Elevation Approximately 211.0 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.7	(Loose), moist, black, silty, gravelly SAND with tree roots and iron staining.
S-2	3 to 5	5.5	1.7 to 5	(Dense), moist, light brown, sandy GRAVEL with cobbles up to 6 inches in diameter.

Bottom of 40-WM2-TP-504 at 5 feet, completed 3/2/92

Figure A-40-29

Log of Test Pit 40-WM2-TP-505

Ground Surface Elevation Approximately 211.1 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Loose), moist, black, silty, gravelly SAND with roots.
			2 to 2.5	(Medium dense), moist, dark brown, sandy GRAVEL.
S-2	3 to 5	5	2.5 to 5	(Dense), moist, light brown, sandy GRAVEL.

Bottom of 40-WM2-TP-505 at 5 feet, completed 3/2/92.

Log of Test Pit 40-WM2-TP-506

Ground Surface Elevation Approximately 210.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Loose), moist, black, silty, gravelly SAND with tree roots.
			2 to 3.5	(Medium dense), moist, dark brown, sandy GRAVEL.
S-2	3 to 5	5	3.5 to 5	(Dense), moist, light brown, sandy GRAVEL.

Bottom of 40-WM2-TP-506 at 5 feet, completed 3/2/92.

Log of Test Pit 40-WM2-TP-507

Ground Surface Elevation Approximately 205.2 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2	(Loose), moist, black, silty, gravelly SAND.
			2 to 2.5	(Medium dense), moist, dark brown, sandy GRAVEL.
S-3	3 to 5	5.5	2.5 to 5	(Dense), moist, light brown, sandy GRAVEL.

Bottom of 40-WM2-TP-507 at 5 feet, completed 3/2/92.

Note:

Test pit excavated next to old post. The black SAND (surficial soil) occurred as fill immediately surrounding the post to the depth of exploration.

Log of Test Pit 40-WM3-TP-501

Ground Surface Elevation Approximately 208.0 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 4	(Loose), moist, black, silty, sandy GRAVEL (see notes below).
S-2	3 to 6	5	4 to 4.5	(Medium dense), moist, dark brown, sandy GRAVEL.
S-3	8 to 10	5	4.5 to 10	(Dense), moist, light brown, sandy GRAVEL with scattered debris (see notes below).

Bottom of 40-WM3-TP-501 at 10 feet, completed 3/3/92.

Notes:

- 1) Test pit excavated next to the foundation in what appeared to be an abandoned drywell.
- 2) Observed a small "void" by corner of test pit location (loose soils).
- 3) Debris from depth of 2.5 to 7 feet included 4-foot steel (brass) ground rod; rusted, galvanized sheet metal; scattered wood chunks; vertical 2- by 6-inch planking from depths of 4 to 7 feet.
- 4) Encountered a 4-inch-diameter, hollow pipe, along side of foundation, which possibly lead to drywell.

Log of Test Pit 40-WM3-TP-501A

Sample Number	Stratum Depth in Feet	Soil Description
Not sampled	0 to 3	(Medium dense), moist, medium to dark brown, sandy GRAVEL with abundant roots (0 to 1 foot depth) with numerous chunks of cement debris up to 2 feet in length) (FILL).

Bottom of 40-WM3-TP-501A at 3 feet, completed 3/3/92

Notes:

- 1) Test pit abandoned due to cement slab at depth of 3 feet.
- 2) Moved test pit to new location (see 40-WM3-TP-501)

Figure A-40-33

Log of Test Pit 40-WM3-TP-502

Ground Surface Elevation Approximately 206.9 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 1.5	2 inches of Forest Duff and branches over (medium dense to dense), moist, black, slightly sandy GRAVEL.
			1.5 to 4	A thin (< 1 inch) layer of light orange-tan, gravelly SAND over (medium dense to dense), moist, medium brown, sandy GRAVEL.
S-2	3 to 5	5	4.0 to 5	(Medium dense), moist, light brown, very sandy GRAVEL.

Bottom of 40-WM3-TP-502 at 5 feet, completed 3/4/92.

Note:

Observed piece of rotten wood (post) from depth of 2.5 to 3 feet.

Log of Test Pit 40-WM3-TP-503

Ground Surface Elevation Approximately 209.2 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1	(Medium dense), moist, medium brown, sandy GRAVEL with roots.
			1 to 3.5	(Medium dense), moist, black, sandy GRAVEL.
S-2	3 to 5	5	3.5 to 5	(Medium dense), moist, light tan-brown, sandy GRAVEL.

Bottom of 40-WM3-TP-503 at 5 feet, completed 3/4/92

Log of Test Pit 40-WM3-TP-504

Ground Surface Elevation Approximately 209.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 2.5	(Loose), moist, black, silty, sandy GRAVEL.
S-2	3 to 5	5	2.5 to 5	(Dense), moist, light brown, sandy GRAVEL.

Bottom of 40-WM3-TP-504 at 5 feet, completed 3/3/92

Note:

Test pit excavated near abandoned railroad grade.

Figure A-40-35

Log of Test Pit 40-WM3-TP-505

Ground Surface Elevation Approximately 213.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4	0 to 0.5	(Medium dense), moist, black, silty, very sandy GRAVEL.
			0.5 to 1.5	(Medium dense to dense), moist, tan- brown, sandy GRAVEL with 2 pieces of old wood.
S-2	3 to 5	4	1.5 to 5	(Medium dense to dense), moist, medium brown, sandy GRAVEL with occasional roots and cobbles.

Bottom of 40-WM3-TP-505 at 5 feet, completed 3/4/92.

Note:

Test pit excavated on former railroad grade.

Log of Test Pit 40-WM4-TP-501

Ground Surface Elevation Approximately 212.4 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 7	(Medium dense), moist, black, silty, sandy GRAVEL over (medium dense), moist, tan-brown, sandy GRAVEL.
S-2	3 to 6	5.5	7 to 7.5	(Loose), moist, medium gray, gravelly, medium to coarse SAND.
S-3	8 to 10	5.5	7.5 to 10	(Loose), moist, light yellowish-brown, coarse, sandy GRAVEL.

Bottom of 40-WM4-TP-501 at 10 feet, completed 3/16/92.

Log of Test Pit 40-WM4-TP-502

Ground Surface Elevation Approximately 213.2 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 1.5	(Medium dense), moist, black, slightly silty, sandy GRAVEL with roots.
			1.5 to 3	(Medium dense), moist, tan-brown, sandy GRAVEL.
S-2	3 to 5	5.5	3 to 3.5	(Loose), moist, tan to gray, slightly gravelly, medium SAND.
			3.5 to 5	(Medium dense), moist, tan-brown, sandy GRAVEL.

Bottom of 40-WM4-TP-502 at 5 feet, completed 3/16/92

Log of Test Pit 40-WM4-TP-503

Ground Surface Elevation Approximately 214.1 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	4.5	0 to 1.5	(Medium dense), moist, black, slightly silty, sandy GRAVEL with roots.
			1.5 to 3	(Medium dense), moist, tan-brown, sandy GRAVEL.
S-2	3 to 5	5.5	3.5 to 4	(Medium dense), moist medium gray, gravelly, medium to coarse SAND.
			4 to 5	(Medium dense), moist, brownish gray, very sandy GRAVEL.

Bottom of 40-WM4-TP-503 at 5 feet, completed 3/16/92

Log of Test Pit 40-WM4-TP-504

Ground Surface Elevation Approximately 215.7 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 0.5	(Medium dense), moist, dark brown, slightly silty, sandy GRAVEL with minor roots.
			0.5 to 2.5	(Medium dense), moist, light tan-brown to dark brown, sandy GRAVEL.
S-2	3 to 5	4.5	2.5 to 4	(Medium dense), moist, dark brown-black, slightly silty, sandy GRAVEL.
			4 to 5	(Medium dense), moist, medium brown, sandy GRAVEL with area of iron staining at depth of 4 feet.

Bottom of 40-WM4-TP-504 at 5 feet, completed 3/16/92.

Log of Test Pit 40-WM4-TP-505

Ground Surface Elevation Approximately 212.9 Feet

Sample Number	Sample Depth in Feet	pH	Stratum Depth in Feet	Soil Description
S-1	0 to 1	5	0 to 1.5	(Medium dense), moist, black, slightly silty, sandy GRAVEL with abundant roots.
			1.5 to 2.5	(Medium dense), moist, tan-brown, sandy GRAVEL.
S-2	3 to 5	5.5	2.5 to 3.4	(Medium dense), moist, medium gray, gravelly, medium to coarse SAND.
			3.4 to 3.8	(Medium dense), moist, tan-brown, sandy GRAVEL.
			3.8 to 5	(Medium dense), moist, grayish brown, sandy GRAVEL with an 8-inch diameter cement drain pipe at depth of 4 feet.

Bottom of 40-WM4-TP-505 at 5 feet, completed 3/16/92

Figure A-40-39

Log of Observation Test Pit 40-OB-TP-501

Sample Number	Stratum Depth in Feet	Soil Description
Not Sampled	0 to 1	(Medium dense), moist, black, slightly silty, sandy GRAVEL with roots.
	1 to 3.5	(Medium dense), moist, tan-brown, sandy GRAVEL.

Bottom of 40-WM4-OB-TP-501 at 3.5 feet, completed 3/16/92.

Log of Test Pit 40-TP-600

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 3.5	(Medium dense), moist, brownish gray, medium to fine SAND with scattered gravels and remnants of blasting wire (FILL).
S-2	4 to 6	3.5 to 10	(Medium dense), moist, dark brown to brown, sandy GRAVEL with occasional cobbles to 1 foot.
S-3	8 to 10		

Bottom of 40-TP-600 at 10 feet, completed 11/6/92.

**AREAS OF POTENTIAL CONCERN
EXPLORATION LOGS**

Log of Test Pit APA-TP-501

Ground Surface Elevation Approximately 204.5 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 1.5	(Loose), moist, brown, silty, sandy GRAVEL with minor organics.
		1.5 to 2.5	(Loose), moist, gray, pea-size GRAVEL.
S-2	3 to 5	2.5 to 5	(Medium dense), moist, yellowish brown, sandy GRAVEL.

Bottom of APA-TP-501 at 5 feet, completed 5/27/92.

Log of Test Pit APB-TP-501

Ground Surface Elevation Approximately 209.4 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 0.6	(Loose), damp, brown, silty, gravelly SAND with some roots
S-2	3 to 5	0.6 to 5	(Loose), damp, light brown, slightly sandy GRAVEL with interbedded gravelly, coarse sand lenses.

Bottom of APB-TP-501 at 5 feet, completed 5/27/92.

Log of Test Pit APB-TP-502

Ground Surface Elevation Approximately 202.7 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 1.4	(Loose), damp, brown, silty, sandy GRAVEL.
S-2	3 to 5	1.4 to 5	(Loose), damp, medium brown, sandy GRAVEL with interbedded gravel layers.

Bottom of APB-TP-502 at 5 feet, completed 5/27/92.

Log of Test Pit APC-TP-501

Ground Surface Elevation Approximately 209.8 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 1	(Medium dense), moist, light brown, silty, sandy GRAVEL.
		1 to 2	(Loose), damp, gray, pea-size GRAVEL.
S-2	3 to 5	2 to 5	(Medium dense), moist, brown, sandy GRAVEL.

Bottom of APC-TP-501 at 5 feet, completed 5/26/92.

Log of Test Pit APC-TP-502

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 1.25	Two inches of Forest Duff over 2 inches of charred soil over (medium dense), moist, dark brown, slightly silty, sandy GRAVEL.
S-2	1 to 2	1.25 to 10	(Medium dense), moist, brown, slightly sandy to sandy GRAVEL with 6-inch layer of medium to fine SAND at 4 feet. Bleached-looking soils observed between depths of 1 to 7 feet along southeast wall of pit.
S-3	3 to 6		
S-4	8 to 10		

Bottom of APC-TP-502 at 10 feet, completed 11/3/92.

Log of Test Pit APC-TP-503

Stratum Depth in Feet	Soil Description
0 to 4	(Medium dense), damp, dark brown to brown, sandy GRAVEL.

Bottom of APC-TP-503 at 4 feet, completed 11/5/92.

Note: Approximately 30 x 18-foot observational test pit excavation. No samples collected because no evidence of potential "sump well" (as indicated from historical drawings) observed.

Log of Test Pit APD-TP-501

Ground Surface Elevation Approximately 210.1 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 3	(Loose), moist, dark brown, silty, sandy GRAVEL with abundant brick debris, quartz, and glazed tile chunks.
S-2	3 to 5	3 to 5	(Medium dense), moist, yellowish brown, sandy GRAVEL.

Bottom of APD-TP-501 at 5 feet, completed 5/27/92.

Notes:

- 1) APD-TP-501 excavated along a length of approximately 20 feet in attempt to locate remnants of the former Asphalt Paint Building (in an area of graded surficial soils). Although construction debris (e.g., bricks) was encountered, no foundations, pilings, or other evidence of a former building was observed.
- 2) Observed a few pieces of a tar-like substance (up to 4 inches long) and lead debris on surface.

Log of Test Pit APE-TP-501

Ground Surface Elevation Approximately 217.1 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 2	Bricks and mortar over 2 inches of black, silty SAND over (medium dense), damp, brown, silty, gravelly SAND.
S-2	3 to 5	2 to 5	(Dense), moist, brown, sandy GRAVEL (NATIVE).

Bottom of APE-TP-501 at 5 feet, completed 5/26/92.

Log of Test Pit APE-TP-502

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 1.5	Two inches of sod over (medium dense), moist, brown, sandy GRAVEL with minor organics (FILL?).
S-2	1 to 2	1.5 to 5	(Medium dense), moist, brown, gravelly SAND.
S-3	3 to 5		

Bottom of APE-TP-502 at 5 feet, completed 11/3/92.

Note: Test pit excavated along edge of 6-inch-thick concrete slab (Main Transformer House foundation).

Log of Test Pit APF-TP-501

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 2.5	(Loose), moist, dark brown, silty, gravelly SAND with minor organics.
S-2	3 to 5	2.5 to 5	(Medium dense), moist, yellowish brown, sandy GRAVEL.

Bottom of APF-TP-501 at 5 feet, completed 5/27/92.

Log of Hand Auger Boring APF-HA-501

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 2	(Medium dense), moist, dark brown, silty, sandy GRAVEL with abundant organics.
S-2	1 to 2		
S-3	2 to 3	2 to 3	(Medium dense), damp, brown, slightly silty, sandy GRAVEL.

Bottom of APF-HA-501 at 3 feet, completed 10/30/92.

Log of Test Pit APG-TP-501

Ground Surface Elevation Approximately 208.0 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 1.5	(Loose), moist, dark brown, silty, sandy GRAVEL with abundant roots and an old water line.
		1.5 to 3	(Loose), moist, gray, pea-size GRAVEL.
S-2	3 to 5	3 to 5	(Medium dense), moist, yellowish brown, sandy GRAVEL.

Bottom of APG-TP-501 at 5 feet, completed 5/26/92.

Log of Test Pit APG-TP-502

Ground Surface Elevation Approximately 209.0 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 1	(Loose), moist, dark brown, silty, sandy GRAVEL with minor organics.
S-2	3 to 5	1 to 5	(Medium dense), moist, yellowish brown, sandy GRAVEL.

Bottom of APG-TP-502 at 5 feet, completed 5/26/92.

Log of Test Pit APG-TP-503

Ground Surface Elevation Approximately 211.0 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 1.5	(Loose), moist, brown, silty, sandy GRAVEL with minor organics.
		1.5 to 3	(Medium dense), moist, yellowish brown, sandy GRAVEL.
S-2	3 to 5	3 to 5	(Loose), moist, gray, pea-size GRAVEL.

Bottom of APG-TP-503 at 5 feet, completed 5/26/92.

Log of Test Pit APG-TP-504

Ground Surface Elevation Approximately 210.4 Feet

Sample Number	Sample Depth in Feet	Stratum Depth in Feet	Soil Description
S-1	0 to 1	0 to 1.5	(Loose), moist, brown, silty, sandy GRAVEL with minor organics and pieces of wire and rebar.
		1.5 to 3	(Loose), moist, gray, pea-size GRAVEL.
S-2	3 to 5	3 to 5	(Medium dense), moist, yellowish brown, sandy GRAVEL.

Bottom of APG-TP-504 at 5 feet, completed 5/27/92.